

Snap-on Tools

and Shop Equipment



SEE
PAGE
24

**"THE CHOICE
OF BETTER MECHANICS"**

For PRODUCTION, MAINTENANCE
and SERVICE WORK
THROUGHOUT ALL INDUSTRY

*Registered U. S. Patent Office
CATALOG "Y"



SEE
PAGE 127

SNAP-ON TOOLS
CORPORATION
KENOSHA, WISCONSIN

Snap-on Tools

**DISTRIBUTED TO CUSTOMERS THROUGH
BRANCHES AND DEALERS EVERYWHERE**

IT'S GOOD BUSINESS FOR YOU TO USE

Snap-on **TOOLS AND SHOP EQUIPMENT**

Regular Service From the Snap-on Dealer

The SNAP-ON dealer who calls regularly at your shop with the latest in tools and equipment can help you select the shop equipment or tools you need and let you try them out right on the job. SNAP-ON dealers all over the country, working closely with service managers and mechanics, understand service problems and keep on the alert for ideas that will improve tool efficiency. This is one of the reasons why SNAP-ON has long been a leader in the field with new time-saving tools for specific jobs. Further, SNAP-ON dealers hear about new uses for tools you may already own and are glad to pass these tips along to you.

Snap-on dealers demonstrate under working conditions. Thus, the tool itself can prove its superior design features and top-quality construction. You can see firsthand why SNAP-ON tools pay big dividends in speed, safety and improved work—why SNAP-ON tools are the choice of better mechanics.

Instruction in Snap-on Equipment Operation

When you invest in SNAP-ON Shop Equipment such as the Anal-O-Scope, Distrib-U-Scope, Wheel Aligning and Balancing Equipment, Engine Test Meters, etc., you can be sure that complete instruction in its operation is available to you. We want your investment to help you render the best possible service to your customers and make more profits for you. Your SNAP-ON dealer has received the training necessary to provide this service himself or can arrange for your instruction by a SNAP-ON Equipment Specialist. This service is available to you whenever you need additional help.

Increase Your Earning Power NOW . . . With Profit Building Tools and Equipment . . . Snap-on Time Payments Make it Easy

Why handicap your earning power with inadequate tools when you can equip yourself with all the tools and shop equipment you need through the SNAP-ON Time Payment plan? Have it working for you while it is paying for itself.

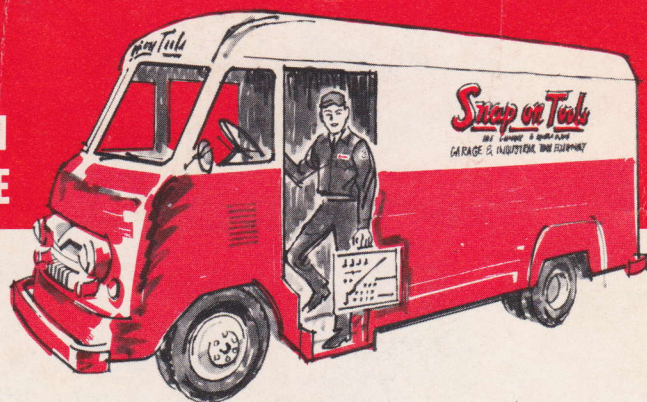
Whether you are a mechanic who needs a complete set of tools, roll-cab, etc., or the operator of a repair shop or service station in need of shop equipment, you'll find it profitable to equip yourself NOW. The biggest corporations do business on credit . . . it's the smart way for you, too. Your SNAP-ON dealer or the nearest SNAP-ON branch office will be glad to arrange a Time Payment Contract for you.

Visit the Nearest Snap-on Branch

Industrial tool users, mechanics, garage owners are always welcome at any SNAP-ON Branch. Our people will be happy to demonstrate and let you examine tools and equipment. If you need tools and a SNAP-ON dealer has not called on you, notify your nearest branch and the dealer in your locality will stop in to see you.

Snap-on Tools May be Ordered by Mail

If there is no SNAP-ON dealer in your area, mail your order to our nearest branch. Tools are shipped promptly. Examine them carefully and if you are not satisfied, send them back unused within ten days and we will gladly replace the tool or refund your money, whichever you request.



**SERVICE
TO
CAR DEALERS**



**SERVICE
TO
MANAGERS**



**SERVICE
TO
MECHANICS**



**SERVICE
TO
STATION
OWNERS**



Special Service to Industrial Tool Users

Snap-on offers specialized tool service to plant executives concerned with production, maintenance and purchasing functions. Production line operations, for example, demand extra tough socket wrenches, specially designed and heat treated to withstand impact and wear. SNAP-ON specialists, after observing actual production operations, can frequently recommend a different socket or a modification that cuts tool costs and time. Because of his training and experience, a SNAP-ON man is often able to suggest using a specially designed tool on jobs where a standard tool can't fill the bill. Whatever the size of your industrial wrench and hand tool requirements, call your nearest SNAP-ON branch for prompt service.

SERVING INDUSTRY WITH TOOLS FOR PRODUCTION AND MAINTENANCE



TOOLS AND SHOP EQUIPMENT ARE SOLD UNDER THE FOLLOWING GUARANTEES

Tools and Shop Equipment made by Snap-on Tools Corporation and its subsidiary companies are designed and manufactured to meet the exacting and particular working requirement of industry and professional service mechanics.

GUARANTEE

Non Electrical Tools and Equipment

Every tool manufactured by this Company has been carefully inspected before leaving the factory, and, to the best of our knowledge is free from defects in material and workmanship. Any tool found to be defective in material or workmanship will be repaired or replaced (except tools or parts indicated by this symbol★).

Guarantee period is limited to thirty days from date of purchase on chisels and punches.

★Note: This symbol is used throughout the catalog to indicate those tools or parts which, because of their nature, are liable to abuse and therefore are not subject to free replacement if they have been used. Tools which have failed for reasons other than defects in material or workmanship, or because of natural wear, or abuse, intentional or unintentional, will not be replaced.

GUARANTEE

Electrically Driven Tools

Electrically driven tools are tested under load and checked for possible electrical and mechanical defects. If such a tool becomes inoperative after use, any parts which are found to be defective will be repaired or replaced without cost, provided that the tool is returned within a period of ninety days from date of purchase to the authorized repair depot, transportation charges prepaid, and provided no repair work has been performed by others.

GUARANTEE

On Following Test Equipment

MT-215	MT-345A	MT-415B	MT-605
MT-314	MT-401B	MT-425A	MT-615B
MT-316	MT-402A	MT-430	MT-630A
MT-323	MT-403	MT-435	MT-631A
MT-326	MT-405A	MT-505	MT-635A
MT-340A	MT-413	MT-540A	

and any subsequent models of the above.

This unit has been carefully checked and tested prior to leaving the factory and, to the best of our knowledge, is free from defects in material and workmanship. We will replace or repair, at our discretion after inspection, all parts found to be defective in material and workmanship for a period of one year from date of purchase, provided the warranty card is returned within ten days of purchase.

The unit must be returned within the warranty period, transportation charges prepaid, with no repair work or alterations performed by others. Any batteries included with unit are not guaranteed.

Note: MT-635 has a silicon rectifier. The rectifier only is guaranteed for a period of five years.

GUARANTEE

On Following Equipment Items

MT-50, MT-320A, MT-335, MT-365
All Models of Torquometers.
Hydraulic Body Rams and Pumps.
All Pneumatically and Hydraulically operated tools.

Same guarantee as for Test Equipment except that the guarantee period is limited to ninety days from date of purchase.

REPAIR CHARGE NOTICE

A charge will be made for any repairs or replacement furnished for reasons other than defects in material or workmanship or required after the expiration date of the guarantee.

DESIGN CHANGE NOTICE

We reserve the right to make changes in design or construction at any time without incurring any obligation to incorporate such changes in tools or equipment previously sold . . . also to discontinue the manufacture of any tools or equipment at such time as we deem it necessary to do so. All dimensions shown in this catalog are subject to commercial tolerances.

FOLLOW THESE SAFETY RULES

We cannot accept responsibility for the results of using tools which have been abused or badly worn, tools such as chisels and punches which have become "mushroomed" by hammer blows; the incorrect or improper use of tools, or the use of tools repaired by others.

Use only Industrial Power and Impact type sockets on electric or pneumatic impact wrenches or nut runners.

Always make sure that electrical equipment and tools are grounded.

Always use the right size and type of such tools as punches, chisels, screwdrivers, hammers, wrenches, etc.

Keep cutting edges properly sharpened and mushroomed handles ground down. A rounded or chipped screwdriver tip is a dangerous tool—file the tip to original shape.

Don't use a screw driver for any other purpose.

Keep screwdrivers, pliers, and other tools clear of electrical hazards.

Wrench handle lengths are designed to keep leverage and wrench strength compatible—increasing leverage by any method is dangerous.

When using any tool, protect your eyes with safety glasses or goggles. Be especially careful when grinding, polishing, punching chiseling, etc.

CATALOG "Y" ISSUED AUGUST, 1962

Printed in U.S.A. Copyright, 1962 by Snap-on Tools Corporation

SNAP-ON TOOLS CORPORATION

KENOSHA, WISCONSIN

Factories: Kenosha, Wis., Mt. Carmel, Ill., Algona, Iowa, Natick, Mass., Toronto, Ont.

BRANCH SALES OFFICES PROVIDE *Snap-on* TOOL SERVICE TO ALL IMPORTANT INDUSTRIAL AREAS

ALBANY 5, N. Y.
118 Everett Road

ATLANTA 24, GA.
2075 Liddell Drive, N.E.

BALTIMORE 5, MD.
4503 E. Monument St.

BOSTON AREA
W. Central St., P.O. Box 217
Natick, Mass.

BROOKLYN 3, N. Y.
1033 Utica Ave.

BUFFALO 13, N. Y.
628 W. Utica St.

CALGARY, ALBERTA
3635 Blackburn Rd.

CHICAGO 7, ILL.
120 N. May St.

CINCINNATI 17, OHIO
4205 Vine St.

CLEVELAND HEIGHTS 18,
OHIO
2066 S. Taylor Road

DALLAS 7, TEXAS
9101 Diplomacy Row

DENVER 11, COLO.
2160 Clay Street

DETROIT 2, MICH.
93 Piquette Ave.

HAMILTON, ONT.
37 Morley St.

HARRISBURG, PA.
210 S. Seventeenth St.

HATO REY, PUERTO RICO
113 O'Neil St., Stop 30

HONOLULU 17, T.H.
2111 Eluwene St.

INDIANAPOLIS 20, IND.
2424 Stewart Ave.

LA GRANGE, ILL.
108 E. Burlington St.
P. O. Box 388

LONDON ONTARIO
465 Nightingale Ave.

LOS ANGELES 17, CALIF.
1717 W. 6th St.

MEXICO, D.F.Z., 7
5a Calle de Jalapa 102

MIAMI 48, FLA.
4311 N.W. 36th St.

MILWAUKEE 22, WIS.
3450 N. 84th St.

MINNEAPOLIS 16, MINN.
4940 West 35th St.

MONCTON, N. B.
27 Pearl St.

MONTREAL 26, QUEBEC
274 Bates Road

NATICK, MASS.
W. Central St., P.O. Box 217

NEWARK 6, N. J.
833 Sanford Ave.

NEW ORLEANS AREA
3711 Hessmer Ave.
Metairie, La. P.O. Box 486

NEW YORK 67, N. Y.
2807 White Plains Road

NORTH BAY, ONT.
1335 Depencier Road

OAKLAND 7, CALIF.
2605 Market St.
P. O. Box 936, Zone 4

OMAHA 10, NEBR.
3601 N. 24th St.

PHILADELPHIA 30, PA.
1710 Fairmount Ave.

PITTSBURGH 21, PA.
630 Ardmore Blvd.

PHOENIX ARIZ.
3229 E. Washington St.

REGINA, SASK.
1362 McIntyre St.

SALT LAKE CITY 15, UTAH
1721 S. Main St.
P.O. Box 15503

SEATTLE 7, WASH.
4503 Eighth Ave., N.W.

ST. LOUIS 10, MO.
2165 Hampton Ave.

SYRACUSE 6, N. Y.
1622 Burnet Ave.

TOLEDO 6, OHIO
2932 Monroe St.

TORONTO 16, ONT.
10 Bermondsey Road

VANCOUVER 5, B. C.
1043 Davie St.

WINNIPEG 12, MANITOBA
1699 Portage Ave.

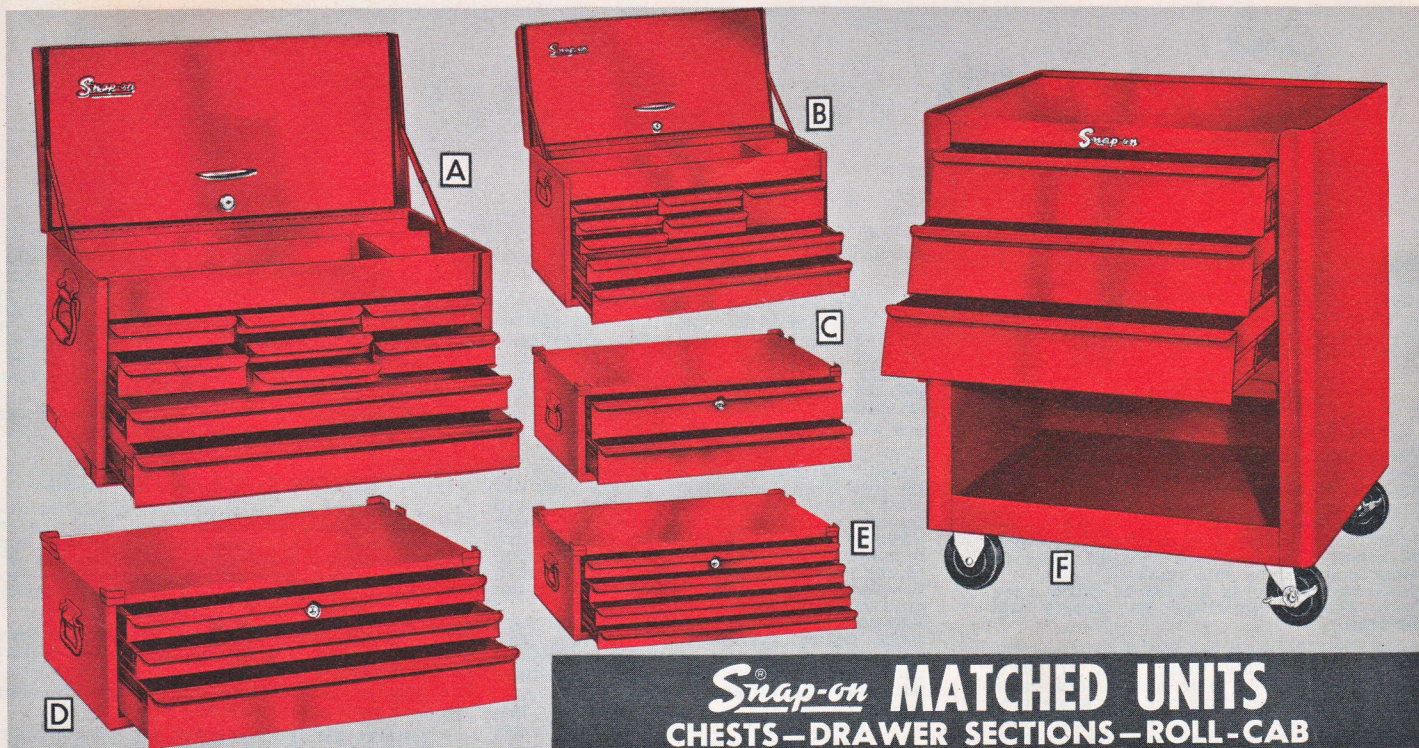
INDUSTRIAL AND RAILROAD DEPT.

Office and Special Shipping Dept.
2905 - 60th St., Kenosha, Wis.

INTERNATIONAL DIVISION

6218 - 23rd Ave., Kenosha, Wis., U.S.A.
Cable Address: "Snapon." All Codes

"*SNAP-ON" IS THE REGISTERED TRADEMARK OF SNAP-ON TOOLS CORPORATION



Snap-on MATCHED UNITS CHESTS—DRAWER SECTIONS—ROLL-CAB

Snap-on TOOL CHESTS—EIGHT-DRAWER AND NINE-DRAWER MODELS

A handsome combination of SNAP-ON Tool Chest, Drawer Section and Roll-Cab parked in your stall marks you as a mechanic who takes pride in his work; a man who will not settle for anything but the best—either in his work or his equipment. It stamps you as a man who knows that top quality tools and equipment actually cost less in the long run—even more important, that they contribute maximum working efficiency to your knowledge and mechanical ability.

These SNAP-ON Tool Chests are the popular choice of thousands of mechanics and are offered in two models with drawer arrangements to suit your particular tool storage needs. The open top compartment has partitioned sections, one of which will hold a KTA-3 Tote Tray. This tray is shown and listed on page 3 and is not furnished with either of the tool chests listed on this page.

The Tool Chests are exceptionally well made and embody all of the best SNAP-ON construction features including those illustrated on pages 4 and 5. Full length piano-type hinges attach the cover and the swinging front panel, and the cover is given added strength and rigidity through reinforcing channels welded underneath. The front panel has a tumbler-type lock and swings down and locks in front of the drawers to provide protection for all the contents.

Snap-on DRAWER SECTIONS—YOUR CHOICE OF THREE MODELS

Whether you need deep drawers, shallow drawers or a combination of both you can get exactly what you want in these popular Drawer Sections. Not only can you use one section in combination with the KRA-352A Roll-Cab and the Tool Chests shown above, or the KRA-56A on page 3, but the sections are designed for stacking one on top of another . . . three, four or more, according to your tool or parts storage requirements . . . metal corners protrude to prevent units from moving. Each unit has strong, trunk-type handles and has baked-on red enamel finish.

Snap-on ROLL-CAB TAKES ALL YOUR TOOLS RIGHT TO THE JOB

F KRA-352A "Roll-Cab", Red Enamel Finish. A companion unit for SNAP-ON Tool Chests as illustrated on page 3. The roomy drawers are automatically locked when the lower compartment panel is closed and locked. When open the panel slides in under the drawers. Three reinforced drawers have wide, heavy duty, no-spill slide runs and slanted fronts with full length drawer pulls. Extra heavy gauge steel and welded construction give you a rugged cab that will assure long, dependable service. Easy glide 4" casters (2 swivel, 2 fixed) allow cab to be rolled to the job with ease.

All drawers have full length roll-type pulls, they are fitted with easy sliding side channels and cannot pull out completely and spill the contents, yet are easily removed if necessary. Close spot welding of the heavy gauge steel adds ruggedness and durability, edges are double-rolled wherever practical to add strength and rigidity. Each chest has sturdy trunk-type handles.

There's a lot of drawer space in those big chests and when you combine one with a Drawer Section and the KRA-352A Roll-Cab you have a tool storage outfit second to none. Each unit is designed to fit perfectly with the others.

- A KRA-58B Tool Chest.** Finished in baked-on red enamel.
B KRA-55B Tool Chest. Finished in baked-on grey enamel.

Specifications of Above Chests

Overall Dimension: 26" long, 12" wide, 14" high.
Top Drawers (3 Included) 7 1/2" x 10 1/2" x 1 3/16" deep.
Top Drawers (2 Included) 7 1/2" x 10 1/2" x 1 11/16" deep.
Top Drawers 2 Included: 7 1/2" x 10 1/2" x 2" deep.
Bottom Drawer (1 Included) 24" x 10 1/2" x 1-15/16" deep.
Bottom Drawer (1 Included) 24" x 10 1/2" x 2-13/16" deep.
Weight: Net 67 lbs., Shipping 71 lbs.

- B KRA-55 Tool Chest.** Same specifications as the KRA-58B except that it has only one each of the top drawers 1 1/4" deep and 2" deep and has instead one small deep drawer 3 3/4" deep.

Drawers have full length pulls and non-spill slide-runs. A tumbler lock on one drawer locks all drawers.

- C KRA-428 Drawer Section.** Two deep drawers.
D KRA-429 Drawer Section. One deep and two shallow drawers.
E KRA-430 Drawer Section. Four shallow drawers.

Specifications of Drawer Sections

Overall Dimensions: 26" long, 14 3/4" wide, 8 1/8" high.
Shallow Drawers 24 3/8" x 13 1/2" x 1-19/32" deep.
Deep Drawers: 24 3/8" x 13 1/2" x 3 3/8" deep.
Approximate Weight: Net 42 lbs. Shipping 48 lbs.

Specifications

Overall Dimensions: 26 5/8" x 19 1/8" x 26 1/2" deep (31 1/4" to floor).
Drawers: All are 21 5/8" x 17 5/8" x 3 7/8" high.
Compartment: 26 1/2" x 19" x 12" high.
Shipping Weight: 113 lbs., net 98 lbs.

KGA-352A Roll-Cab. Same as above, but with grey enamel finish.

KRA-362A Combination. Two units, the KRA-58B Chest and the KRA-352A Roll-Cab. Red enamel finish.

KGA-362A Combination. Two units, KGA-58B Chest and KGA-352A Roll-Cab. Grey enamel finish.

For other Combinations see listings and illustrations on opposite page.

MAXIMUM STORAGE with *Snap-on* TOOL CHESTS



WITH *Snap-on* YOU BUILD YOUR CABINETS AS YOUR TOOL EQUIPMENT GROWS

Start with the unit that fits present needs and add a unit as your tool equipment grows. Here is quality construction and material that will last indefinitely. Extra heavy gauge steel is used throughout and electric welded construction with reinforced tops and sides assures rigid non-warping units

KRA-59A LARGE TOOL STORAGE CHEST

A **KRA-59A Tool Chest.** Fits on top of the KRA-352A Roll-Cab but provides 50 percent more space than KRA-56A. The KTA-3 Tote Tray (not included with chest) will fit into one of the top compartment sections. Bottom drawer has no dividers, other long drawers have partitions. Drawer pulls have stainless steel trim. Covers have continuous hinges, and combination cam-type lock and bar locks secure the chest at five points—only one key is needed. Skid rails under the chest permit sliding it over rough surfaces without damage. The six small drawers have cork fitted bottoms.

Overall Dimensions: 26" long, 14 $\frac{3}{4}$ " wide, 17 $\frac{3}{8}$ " high.

Top Compartment: 1 $\frac{3}{4}$ " deep—divided into 3 sections, 25 $\frac{5}{8}$ " x 5 $\frac{5}{8}$ ", 20 $\frac{3}{4}$ " x 8 $\frac{3}{8}$ " and 4 $\frac{7}{8}$ " x 8 $\frac{1}{4}$ ".

Drawers: Top rows each 7" x 13 $\frac{1}{8}$ " x 1-15/16" high.

Second row, each 7" x 13 $\frac{1}{8}$ " x 1-15/16" high.

Large drawers, top two are each 23 $\frac{1}{8}$ " x 13 $\frac{1}{8}$ " x 1-15/16" high.

Bottom one is 23 $\frac{1}{8}$ " x 13 $\frac{1}{8}$ " x 3 $\frac{1}{4}$ " high.

Shipping Weight 97 lbs., net 87 lbs.

and drawers. Drawers in all units are easy gliding slide-run—can't sag, bind or pull out and spill tools. High grade tumbler locks on each unit protect your tool investment. For the details of construction see pages 4 and 5. All units finished in baked-on red enamel.

KRA-56A BIG, SIX DRAWER TOOL CHEST

B **KRA-56A Tool Chest.** Full length piano-type hinges which connect the lid and the front panel to the chest add rigid strength and good appearance. Lid has inner reinforcing. Front panel lifts up out of the way and two folding brackets hold the lid open. Strong trunk handles make carrying easy. Top compartment will hold the KTA-3 Tote-Tray listed below (not included with chest). Skid runners attached to bottom of chest aid in transporting it when loaded. Bottom drawer has wide, extra heavy duty slide runners . . . helps prevent drawer sagging when heavily loaded.

Overall Dimensions: 26" long, 12" wide, 14" high.

Top Compartment: 3 $\frac{1}{2}$ " deep—divided into 3 sections, 20 $\frac{1}{2}$ " x 8 $\frac{1}{2}$ ", 25 $\frac{3}{4}$ " x 3 $\frac{1}{4}$ " and 8 $\frac{1}{2}$ " x 5".

Drawers: 3 are 10 $\frac{1}{2}$ " x 7 $\frac{1}{2}$ " x 1" high—3 are 24" x 10 $\frac{1}{2}$ ", and are 1", 1 $\frac{3}{4}$ " and 3 $\frac{1}{2}$ " high respectively.

Shipping weight 70 lbs., net 63 lbs.

TOTE TRAY

C **KTA-3 Tote Tray.** Fits the chest shown above. Has socket compartment. Tray is 20 $\frac{1}{4}$ " x 8" x 3 $\frac{1}{4}$ " high. 1 $\frac{1}{4}$ " lbs. net weight.

2 AND 3 DRAWER COMBINATION CABINETS ARE "TOPS"



KRA-359A COMBINATION

Consists of KRA-352A Roll Cab, the KRA-429 three-drawer section with KRA-56A Tool Chest stacked on top. This is a lot of "cabinet" and allows you to arrange space as you need it to provide working convenience.



KRA-357A COMBINATION

A low priced unit yet with plenty of space to take care of most needs. Has popular KRA-56A Tool Chest stacked on top of KRA-352A Roll Cab. The portability of the combination makes it handy for shop or factory use.



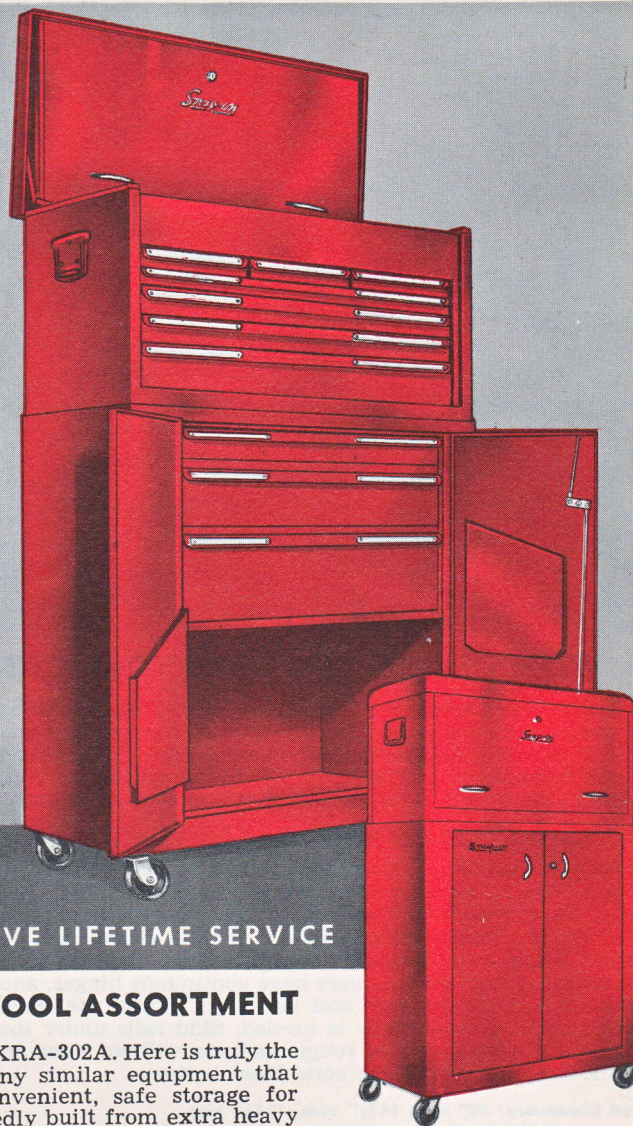
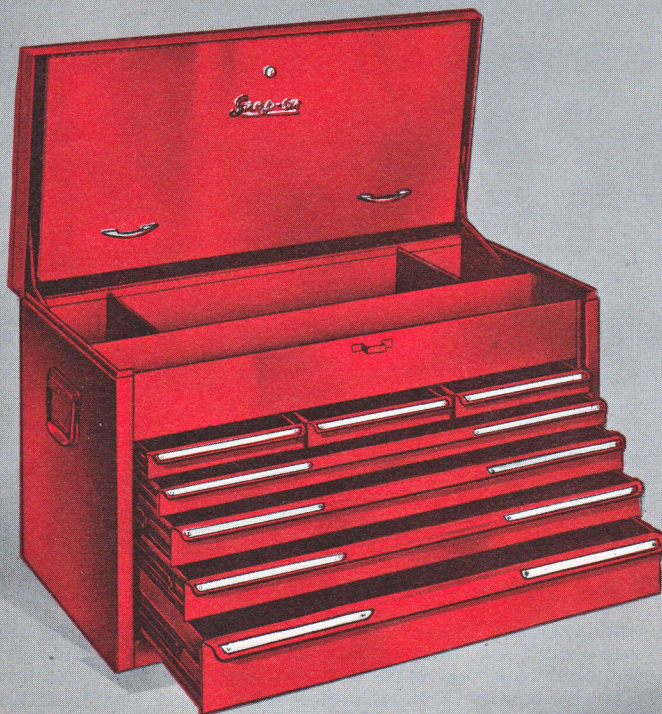
KRA-360A COMBINATION

A three unit combination made up of the KRA-352A Roll Cab, the popular KRA-429 3-Drawer section and the KRA-58B Chest. This excellent storage outfit gives you a drawer arrangement to take the largest tool kit.



KRA-370A COMBINATION

These two units provide plenty of storage space for a wide range of tools, large and small. The KRA-352A Roll-Cab gives you the portability you need and the big KRA-59A Tool Chest has an excellent drawer arrangement for tool segregation.



SUPERCHEST AND "ROLL-CAB"

EXTRA HEAVY GAUGE STEEL WELDED TO GIVE LIFETIME SERVICE

Snap-on SUPER COMBINATION HOLDS LARGE TOOL ASSORTMENT

A KRA-361A SNAP-ON Super Combination. Made up of KRA-61A and KRA-302A. Here is truly the last word in a matching chest and roll-cab . . . so far ahead of any similar equipment that there is absolutely no comparison. It is designed to give you convenient, safe storage for everything from Midget tools to large pullers, drills, etc. It is ruggedly built from extra heavy gauge steel, welded and reinforced for strength and rigidity. Check its net weight of approximately 250 lbs. against any other similar equipment. In addition, it is also an impressive addition to any shop with its rich red baked-on enamel finish and chromium trim.

Snap-on SUPERCHEST

B KRA-61A SNAP-ON Superchest. 7 Drawers segregate your hand tools for fast, convenient selection and checking. Each drawer has full length pulls with stainless steel trim and Non-Spill slide runs for easy action . . . cannot pull out or tip and spill contents. Bottom drawer has extra heavy duty slide runs. Has piano-type hinges, tumbler-type lock, truck-type carrying handles.

Size: 31" long, 15" wide, 17" high.

Top Compartment: divided into four sections—one fits the KTA-3 Tote Tray (see page 3, not included with chest).

Drawers: 3 are 8½" x 13" x 1" high.
1 is 27½" x 13" x 1" high.
2 are 27½" x 13" x 1½" high.
1 is 27½" x 13" x 3¼" high.

Shipping weight 137 lbs., net 122 lbs.

Snap-on SUPER "ROLL-CAB"

C KRA-302A SNAP-ON Super "Roll-Cab". Plenty of room in these big drawers and large compartment to store your larger tools and equipment. The runners on the two big drawers are extra wide and rugged. The Cab rolls easily on 5" plate-type hard composition casters (2 swivel and 2 fixed)—even when fully loaded. Large chromium plated door handles have tumbler type lock. Doors have full length piano-type hinges and each door has a metal pocket for instruction books, etc.

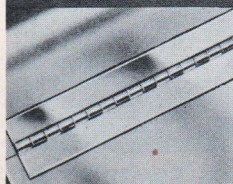
Cab Size: 32½" high, 32¾" long, 17⅞" wide.

Drawers: 2 are 15¾" x 13" x 2½" high.
1 is 15¾" x 26" x 4¼" high.
1 is 15¾" x 26" x 6¼" high.

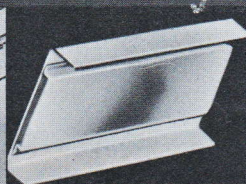
Compartment is 17" x 32¾" x 11" high.

Shipping weight 153 lbs., net 122 lbs.

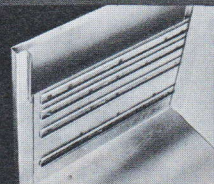
THESE IMPORTANT FEATURES CONTRIBUTE TO **Snap-on** QUALITY



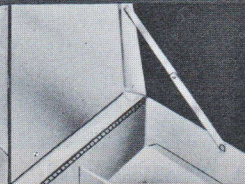
Full length piano-type hinges are used on doors and lids to provide greater strength and finest appearance. They are closely spot welded in position.



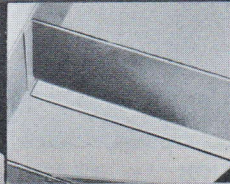
A steel channel panel welded inside the lid adds rigidity and structural strength . . . also helps to prevent any warping of the lid or the hinge.



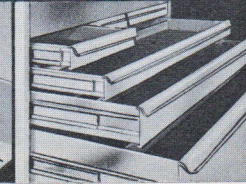
Drawer runners are attached to extra steel plates welded into the chest and cab. This construction adds to the strength and rigidity of the unit.



A folding brace at each end of the chest holds the lid in open position. Prevent lid from closing accidentally. Easily lowered by pressing brace.



Space dividers also serve as reinforcing braces. Welded to the bottom and the sides of a drawer they help prevent sagging or buckling of the drawers.



Drawers slide easily on full length slide-runs. They will not sag or pull out accidentally and open easily even when heavily loaded with tools or parts.



Snap-on[®] MECHANICHESTS HOLD FULL SET OF TOOLS

HAVE LOCKING FRONT PANELS—ARE RUGGED—EASY TO TRANSPORT

GABLE ROOF "MECHANIKIT"

A KRA-21 A new gable roof "Mechanikit" offers features that make it a favorite of professional mechanics and provide ample space for average set of tools. Lid has full length piano-type hinge. Gable roof provides extra tool space and accommodates handle of KTA-1 Tote-Tray which fits in upper compartment and is furnished at no extra cost. The bottom drawer has a sliding tray for small tools and parts. Each drawer is fitted with "non-spill" slide runs which permit drawers to open without sagging or falling out. Drawers always glide easily.

Heavy gauge steel is electrically welded for rigidity and strength. When open, the piano hinged front drops down out of the way of the drawers. When closed, the front secures to top with hasp fasteners and has strong padlock hasp for locking chest. Suitcase handle at top and trunk handles at the sides makes handling easy. Finished in beautiful baked-on red enamel. For all-around convenience this "Mechanikit" is tops.

Specifications

Overall Dimensions: 21" long, 8 $\frac{3}{4}$ " wide and 11 $\frac{1}{4}$ " high.
Top Drawer: 19 $\frac{3}{4}$ " x 7 $\frac{3}{4}$ " x 1 $\frac{1}{2}$ ".
Bottom Drawer: 19 $\frac{3}{4}$ " x 7 $\frac{3}{4}$ " x 3".

QUALITY "MECHANICHEST"

B KRA-53 One of our best tool chests and embodies all of the superb construction features shown at the bottom of this and the opposite page. Heavy welded construction, full length piano-type hinge. Drawers have non-spill slides. Top compartment has 3 sections, will accommodate the KTA-2 Tote-Tray listed below. Note: Tray is not included with Chest. Front cover has tumbler lock. Panel swings out of way when lid is lifted. Lid has two folding brackets to hold it open. Big trunk-type side handles give portability. Here's the perfect Chest to store and protect your valuable tools. The red enamel baked-on finish makes it a good looking chest on any work bench.

Specifications

Overall Dimensions: 24 $\frac{1}{8}$ " long, 10 $\frac{1}{2}$ " wide and 11 $\frac{3}{4}$ " high.
Top Compartment: 1 $\frac{3}{4}$ " deep, divided into 3 sections 23 $\frac{7}{8}$ " x 2 $\frac{1}{4}$ ", 19 $\frac{1}{2}$ " x 7 $\frac{3}{8}$ " and 7 $\frac{3}{8}$ " x 4 $\frac{1}{4}$ ".
Top Drawer: 21 $\frac{3}{4}$ " x 8 $\frac{7}{8}$ " x 1 $\frac{3}{8}$ " divided into 4 sections.
Middle Drawer: 21 $\frac{3}{4}$ " x 8 $\frac{7}{8}$ " x 2" divided into 2 sections.
Bottom Drawer: 21 $\frac{3}{4}$ " x 8 $\frac{7}{8}$ " x 3 $\frac{3}{8}$ " no divisions.
Net weight 42 $\frac{1}{2}$ lbs. Shipping wt. 47 lbs.

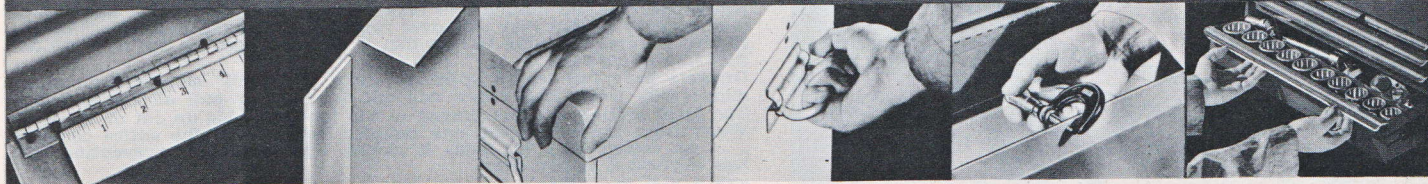
MIDGET TOOL CHEST

C KRA-65A Midget Tool Chest has no drawers to pull out—no trays to lift out. Top section moves back on slide channels. Compartments segregate the contents, bigger tools such as screw drivers and wrench handles fit into bottom sections. Overall size: 11 $\frac{3}{4}$ " long, 7 $\frac{3}{4}$ " wide and 3 $\frac{1}{2}$ " high. Made of heavy gauge steel, electrically welded throughout. Two sturdy hinges and tumbler lock secure the contents. Metal handle welded to cover makes chest convenient to carry. The Midget Chest is finished in baked-on red enamel.

TOOL TOTE TRAY

D KTA-2 Tote Tray. Here is a unit that will have unlimited use. Handy to carry tools and parts for small job, big enough to accommodate good selection of units. Partitioned to segregate sockets from other tools. Size: 19" long, 7" wide and 2 $\frac{3}{8}$ " high. This tray will fit into the top compartment of the KRA-53 Mechanichest listed above. Finished in baked-on red enamel.

...LONGER LIFE...BETTER PROTECTION...AND PREVENT LOSS OF TOOLS



Note how close the spot welds are on a SNAP-ON chest or cab... only 2 $\frac{1}{2}$ " to 3" apart. Extra welds mean extra dollars worth of wear for you.

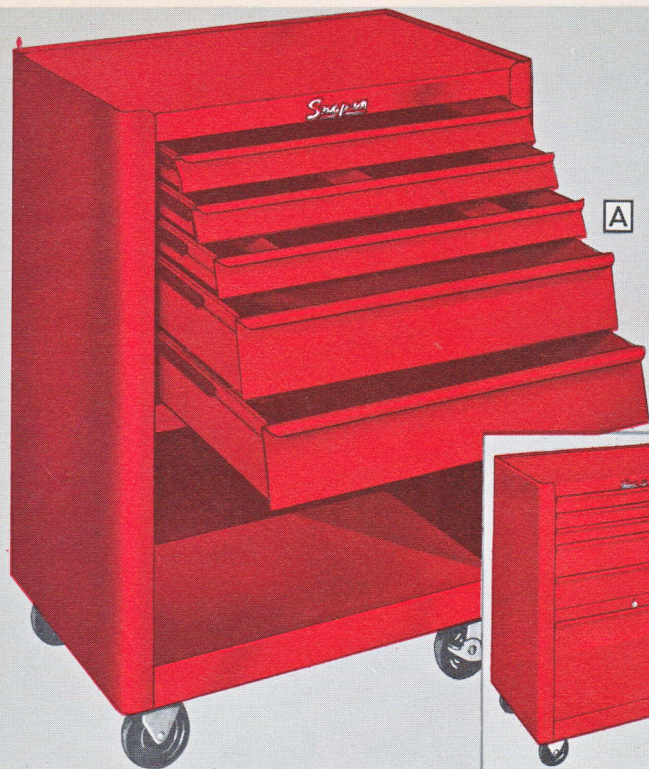
Wherever it is practical to add strength or rigidity, edges are double rolled. This more costly type of construction adds years of satisfactory use.

Rounded welded corners and edges are smoothed with file and emery cloth before the rich red enamel finish is applied to the metal.

Sensible trunk type carrying handles. Strong enough to lift the heaviest chest load... big enough to hold without pinching or cutting fingers.

All chests, Roll cabinets, benches and trays are made of heavy gauge steel to provide strong, rigid construction and long life. Tools deserve protection.

Most drawers are full length to accommodate your longer, larger tools—other drawers are divided to allow you to segregate various tools.



A



B



Snap-on WELDED STEEL COASTER-CAB WITH LOWER DRAWER SECTION AS OPTIONAL EQUIPMENT

KRA-377A Snap-on "COASTER-CAB"

ROLLS RIGHT TO THE JOB—NO LOST TIME—NO HUNTING FOR TOOLS

A KRA-377A Coaster Cab. Modernize your maintenance shop with roller cab convenience and speed repair work by taking the bench to the job. Here is plenty of storage room for all your tools from Midget tools to large drills, gear pullers, and other equipment . . . built into a rolling work bench. It is ruggedly built of heavy gauge steel and electrically welded for greatest strength.

A "drop-in" front panel encloses the lower compartment and slides into a rack under the lower drawer. One tumbler-type lock secures the entire contents. The heavy gauge, flat metal top provides plenty of working space. 4" diameter casters (2 swivel, 2 fixed) roll your "Coaster-Cab" easily and quietly to the job. The attractive red enamel finish is oven baked at high temperature so the cabinet will keep that new, glossy finish indefinitely.

KGA-377A Coaster Cab. Grey enamel finish.

Five Sturdy, Roomy Drawers

Plenty of space for wrenches and hand tools—even long sliding bars, extensions, etc. Each drawer has "Non-spill" slide runs, and the two bottom drawers have extra wide, heavy duty runners placed low on the drawer sides. Even when heavily loaded these drawers will slide easily and without sagging, binding, tipping, or pulling out completely and spilling.

Specifications

Overall Dimensions: 26 $\frac{5}{8}$ " long, 19 $\frac{1}{8}$ " wide, 37" high. Three Top Drawers: 21 $\frac{1}{2}$ " long, 18 $\frac{1}{2}$ " wide, 1 $\frac{3}{4}$ " high. Two Bottom Drawers: 21 $\frac{1}{2}$ " long, 18 $\frac{1}{2}$ " wide, 3 $\frac{7}{8}$ " high. Compartment: 22 $\frac{1}{2}$ " long, 19" wide, 12 $\frac{1}{2}$ " high. New Weight: 145 lbs., Shipping Weight 154 lbs.

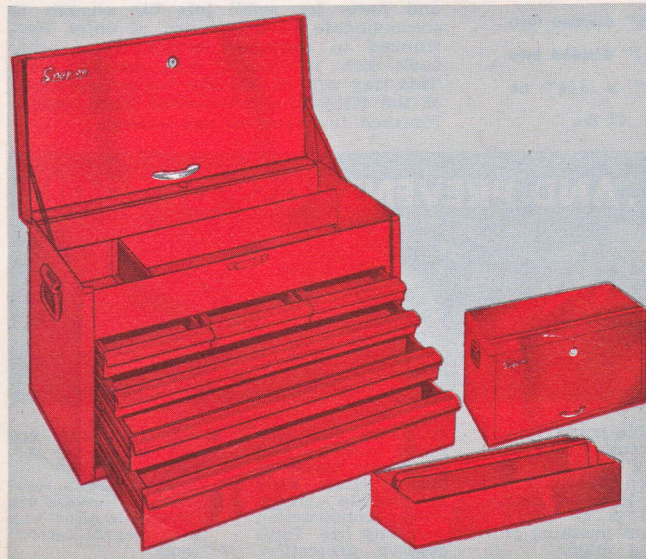
KRA-433 OPTIONAL 3-DRAWER SET

B KRA-433 Three-drawer Set. Red enamel finish. If you desire the convenience of additional drawer space you can easily convert the open compartment with the addition of this optional set of drawers. No drilling—no bolting—simply slip the drawer runners into the channels factory-welded into the sidewalls of the cabinet. Note: this set of drawers will only fit the KRA-377A model Coaster-Cab shown above. Each drawer has full length pull and "non-spill" runners, the two large drawers have extra wide heavy duty runners to handle heavy loads easily.

KGA-433 Drawer Set. Grey enamel finish, for KGA-377A Coaster-Cab.

Specifications

Top Drawer: 21 $\frac{1}{2}$ " long x 17" x 1 $\frac{7}{8}$ ".
Two Lower Drawers: 21 $\frac{1}{2}$ " x 17" x 3 $\frac{7}{8}$ ".
Net Weight: 55 lbs. Shpg. Wt., 59 lbs.



HEAVY DUTY TOOL CHEST WITH REINFORCED STEEL RUNNER SKID BOTTOM

KRA-57 Heavy Duty Chest. Extra strong and rigid for hard, rugged use and to withstand stresses and strains that come from being bounced around in trucks, as is common in road service, oil, telephone, construction, and other fields. It is made of heavier gauge steel than our other models and has more internal bracing and supports, plus closer spot welds. Welded skids add support to the bottom and make it easy to slide around. Skids have tapered ends so that they ride over rough spots and obstructions. They are slightly shorter than the box so that it can be placed on top of a KR-352 Roll Cab if desired.

Drawers have full length pulls and have "non-spill" slide runners—they glide easily when loaded and will not tip, bind or pull all the way out. The front section is piano-hinged to the top and folds up out of the way. When front panel is closed one tumbler lock secures the entire contents . . . an interlocking lip holds it closed when unlocked, preventing tool loss if chest is tipped over.

KTA-3 Tote Tray. Fits top compartment. Not included with chest but may be ordered separately. 20 $\frac{1}{2}$ " x 8" x 3 $\frac{1}{4}$ " deep.

Specifications

Overall Dimensions: 27 $\frac{1}{8}$ " x 13 $\frac{1}{8}$ " x 15 $\frac{3}{8}$ " high.
Top Compartment: 26 $\frac{1}{2}$ " x 12 $\frac{3}{8}$ " x 4" deep divided into three sections 26 $\frac{1}{2}$ " x 4", 8 $\frac{1}{4}$ " x 5 $\frac{3}{8}$ ", and 20 $\frac{1}{2}$ " x 8 $\frac{1}{4}$ ".
Top Drawers: 11 $\frac{1}{4}$ " x 7 $\frac{1}{4}$ " x 1 $\frac{1}{4}$ " deep, felt lined.
Bottom drawers: 22 $\frac{3}{4}$ " x 11 $\frac{1}{4}$ " x 1 $\frac{1}{4}$ ", 15 $\frac{1}{8}$ " and 3 $\frac{1}{4}$ " deep.
Weight: Net Weight 95 lbs., Shpg. Wt. 120 lbs.



ABOVE: "ROLLA-BENCH" WITH OPTIONAL SET OF THREE BOTTOM DRAWERS IN PLACE.

RIGHT: ALUMINUM ROLL FRONT LOCKS ENTIRE CONTENTS.



Snap-on ROLLA-BENCH TAKES TOOLS AND BENCH RIGHT TO THE JOB

A PORTABLE WORK BENCH AND A ROOMY TOOL AND EQUIPMENT CABINET IN ONE UNIT

Here you have ample facilities for the orderly arrangement of your wrenches and hand tools and storage space for electric drills, impact wrench, or other bulky equipment. Rugged 14 gauge steel is used for the cab bottom and top and the top which is reinforced to provide a sturdy base for grinders or other equipment has a heavy masonite work surface. The entire unit is heavy gauge steel construction, electrically welded for great strength and long service and, with the exception of the roll front, is finished in baked-on red enamel.

The roll front is constructed of interlocking

MODELS AVAILABLE

KRA-300B Rolla-Bench—Red Enamel Finish.

KGA-300B Rolla-Bench—Grey Enamel Finish.

Note: Light, wiring and junction box are not included but are available as accessory units.

ACCESSORY UNITS

KRA-431A Set of Three Drawers—red finish.

KGA-431A Set of Three Drawers—grey finish.

Above drawers are available for users who need additional drawer space. They fit perfectly into factory installed slides in the lower compartment. Each drawer is 26 $\frac{3}{4}$ " x 15 $\frac{1}{2}$ " x 3 $\frac{3}{16}$ " deep. Weight of the set is 25 $\frac{1}{2}$ lbs.

KRA-303 Junction Box—red enamel finish.

KGA-303 Junction Box—grey enamel finish.

This unit fits into a factory prepared opening and retaining bracket in the cab. It has a 3-conductor inlet and two 3-conductor outlets. Ten feet of No. 16 3-conductor cord and fittings are included.

KRA-304 Light Fixture. Attaches to back of cab. Flexible top provides convenient usage. 2-conductor cord may be plugged into wall outlet or junction box. Available in red finish only.

panels of extruded aluminum having a natural colour satin finish. It glides up, over and behind the drawers in a continuous channel that prevents binding and assures free movement. This feature is especially useful where limited space would make hinged doors inconvenient. A tumbler-type lock securely fastens the closed front.

All drawers are fitted with "non-spill" slide runners that glide easily even when drawers are loaded. A fixed stop prevents drawers from pulling out completely and spilling the contents. Large drawers have extra wide runners and, on the long drawers, the runners are set low on the sides to gain maximum rigidity and sag-proof support. A welded-in dividing strip lengthwise in the long drawers adds rigidity and helps segregate the contents. Drawer pulls are full length rolled type with stainless steel trim strips.

The push-bar handle is chromium plated and extends from its bracket to permit use as an extension cord holder. Bracket and cab have pre-drilled holes for the attaching screws. No light or wiring is included but a cover plate may be removed and the optional junction box inserted in its place.

SPECIFICATIONS

Overall Dimensions: 33" x 19" x 37 $\frac{1}{8}$ " top to floor.

3 Drawers: 8 $\frac{1}{4}$ " x 15 $\frac{1}{2}$ " x 1 $\frac{1}{16}$ " deep.

3 Drawers: 26 $\frac{3}{4}$ " x 15 $\frac{1}{2}$ " x 1 $\frac{1}{16}$ " deep.

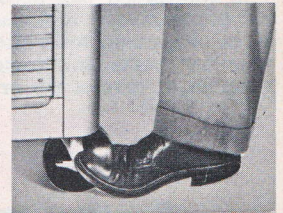
2 Drawers: 26 $\frac{3}{4}$ " x 15 $\frac{1}{2}$ " x 3 $\frac{3}{16}$ " deep.

The five long drawers have a lengthwise divider.

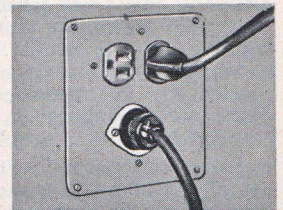
Open Compartment: 27 $\frac{3}{4}$ " x 18" x 12 $\frac{1}{2}$ " deep.

Casters: 2 Fixed, 2 swivel, with wheel brakes. 5" diameter hard composition wheels.

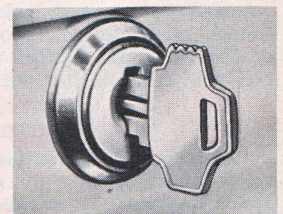
Weight: Net 188 lbs.; Shipping: 220 lbs.



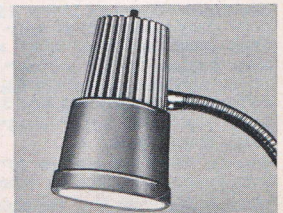
WHEEL LOCK



JUNCTION BOX

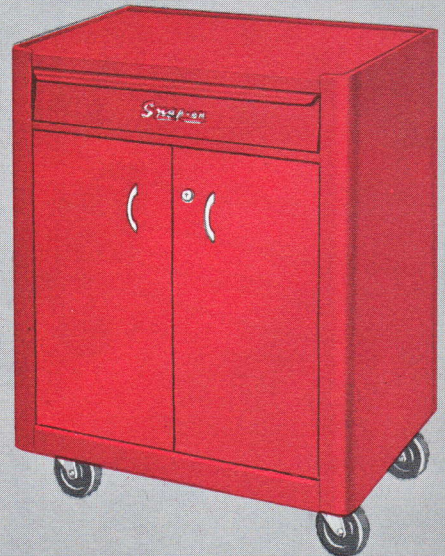


TUMBLER LOCK



LIGHT FIXTURE

EQUIPMENT ROLL-CABINET



A STURDY ROLL-CAB ADAPTABLE TO MANY USES IN SHOP OR FACTORY

KRA-315B Roll-Cab is especially designed as a work bench and storage cabinet for test instruments and accessories, parts, etc. It is built of heavy gauge steel with welded construction to withstand hard usage for a long period of time. It provides a fast, easy method of taking tools and testing equipment right to the job. All four wheels are swivel-caster type for maximum maneuverability in restricted areas.

The reinforced top accommodates either large test instruments or heavy tool chest and a metal lip encloses three sides to prevent tools sliding off. The large drawer is invaluable for parts and tools and glides easily on heavy duty runners, it cannot tip or be pulled all the way out by acci-

dent and its slanted front prevents the full length pull from projecting beyond the cab front.

The two doors have metal literature pockets on the inside and one tumbler-type lock secures both doors and the drawer. Top is 19" x 26½" wide. Drawer is 18¼" x 21½" x 4¼" deep. Lower section has a convenient shelf. Area above shelf is 13¼" high. Overall dimensions including casters are 26¾" wide, 19¼" front to back and 34¾" high. Net weight is 102 pounds.

This Roll-Cab is finished in bright red enamel finish, baked on for long wear and beauty.

HIGHLY MANEUVERABLE AND VERSATILE TOOL TRUCK

Upstairs, downstairs, over rough floors . . . this truck handles easily

KRD-340 Tool Truck combines maximum portability and maximum storage space into an attractive, easy to handle unit. It provides adequate space for storage of most tools and parts needed by maintenance men in industrial plants, or any operation where tool and parts transportation is a problem.

It has two separate sections mounted one on top of the other. Top section is partitioned off into 18 small compartments for storing of nuts, bolts, parts, etc. These compartments are covered by a door held in place by a full length piano hinge. Door swings upward out of the way. Has handle and a latch to receive padlock. A metal bar which slides through two

metal loops is used with a padlock to keep drawers closed and locked. Each drawer has two chrome handles. Rubber grips on the truck handles provide a firm comfortable hand hold. Truck is mounted on four hard composition wheels, two 2¾" caster wheels at front swivel for easy steering.

Two 10" x 2" wide semi-balloon tires on rear make the truck easy to handle on stairs, rough flooring, etc. A sheet steel push plate located down low on the back of the truck assists the operator to tip the truck back when moving it.

SPECIFICATIONS

Overall Height: Handle to floor 39".

Lower Cabinet: 24¾" x 16" x 24" high.

Two Top Drawers: 21" x 15¼" x 1½" high. One has three 7" x 15¼" sections, the other has three 21" x 5" sections for segregation of tools or parts.

Two Lower Drawers: 21" x 15¼" x 6¾". One has removable partitioned tote tray with a full length handle. Tray measures 20¼" x 8" x 3¼".

Parts Cabinet: 24½" x 11½" x 3¼".

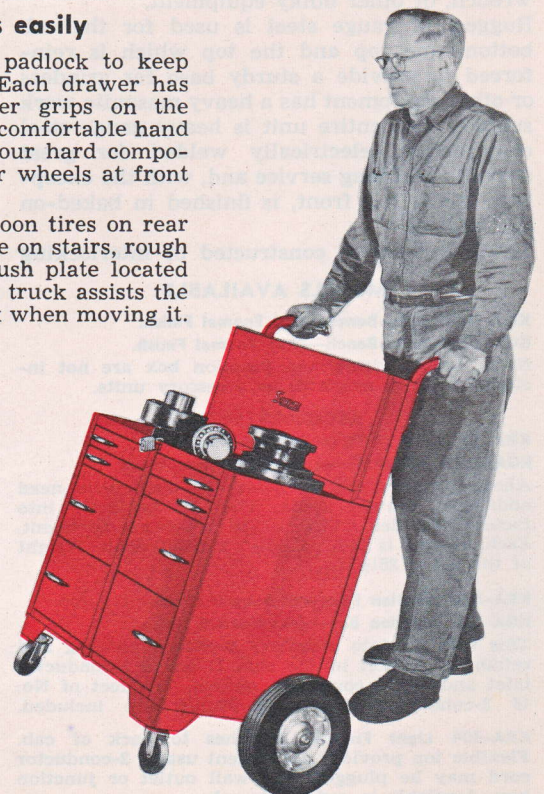
Three compartments are 6¾" x 3½" x 3¼".

Fifteen compartments are 3½" x 3½" x 3¼".

Work Top Area: 24½" x 13" with 1" lip to keep tools or parts from rolling off.

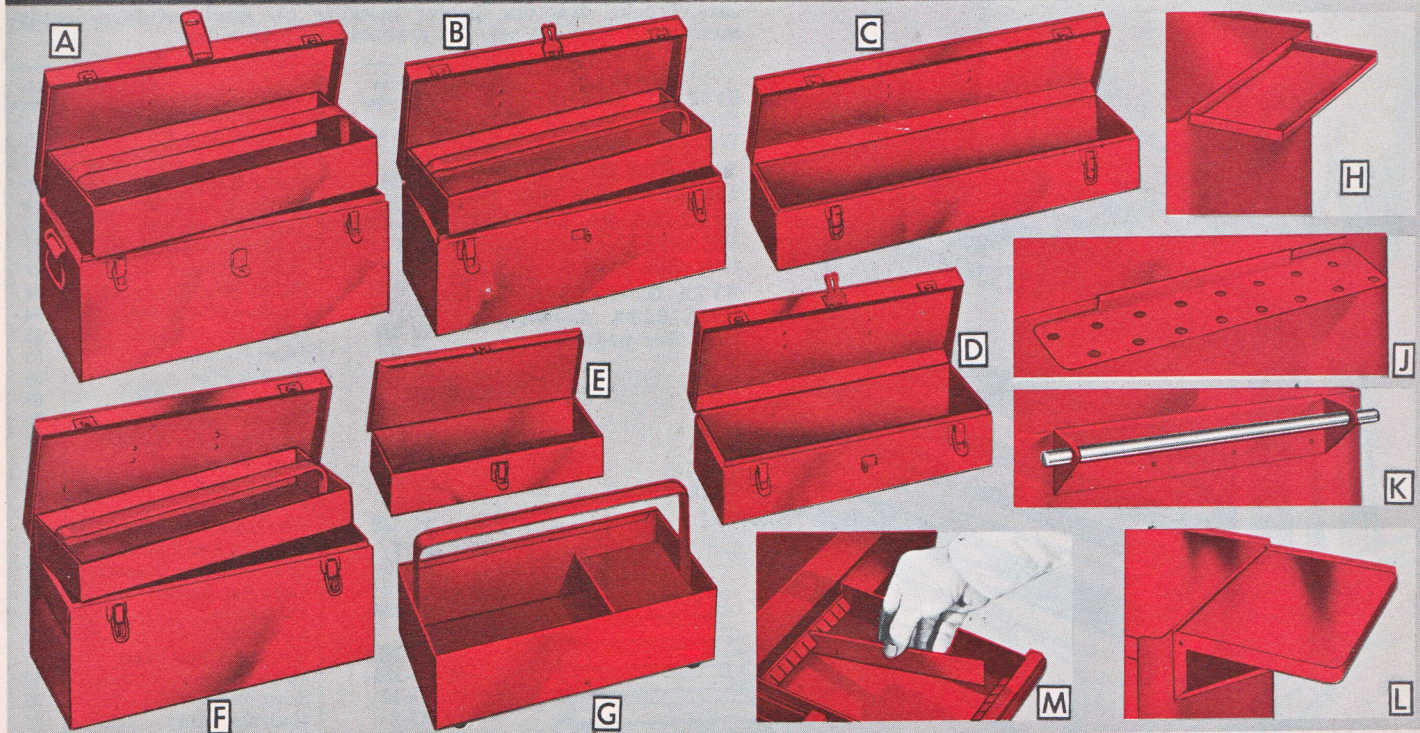
Wheels: Rear wheels are 10" diameter, 2" wide, semi-balloon type. Front swivel wheels are 2¾" diameter.

Weight: Net 100 lbs. Shipping 115 lbs.



"MECHANIKITS"—SMALL BOXES—ACCESSORIES

PROTECT YOUR TOOLS—PROVIDE WORKING CONVENIENCE



MADE OF HEAVY GAUGE STEEL—SPOT WELDED FOR RIGIDITY AND LONG SERVICE

A KRA-25 "MECHANIKIT"

Size: 21 $\frac{1}{8}$ " x 8 $\frac{3}{4}$ " x 9".

Here is an exceptional value in a tool box. It gives you plenty of room to carry all the tools you are likely to need on the job—gives you a large size, sturdily constructed tool chest, complete with a handy tool tote-tray, at low cost.

The heavy gauge steel is electrically welded to provide rigidity and durability. Three heavy steel hinges are welded in place. Large trunk-type handles are welded to the ends of the chest. Two lever-type clasps and a padlock hasp secure the cover. Cover is box-type to accommodate the tray handle. Tote tray measures 20 $\frac{1}{4}$ " x 8" x 3 $\frac{1}{4}$ " high and is partitioned to segregate tools. Finished in red enamel.

B KRA-24 "MECHANIKIT"

Size: 20" x 7 $\frac{3}{4}$ " x 5 $\frac{1}{2}$ " high.

This tool box is slightly smaller than the one above, but it is made of the same heavy gauge steel welded for rigid strength. A large carrying handle is fastened to the top of the cover. Cover is fastened with two lever-type clasp fasteners and a padlock hasp and it has two sturdy hinges. The partitioned tool tote tray is furnished with this Mechanikit. Box and tray have a red enameled finish.

C KRA-109 METAL TOOL BOX

Size: 25 $\frac{1}{2}$ " x 6" x 4 $\frac{1}{2}$ " high.

This long tool box can be easily carried by the fold-down handle on the cover. It is a sturdy, well built box suitable for those longer, bigger tools. It has three heavy butt-type hinges welded to the cover, and two tension lever type clasps. Heavy gauge steel is electrically welded for long life and rigidity. Red enamel finish.

D KRA-251 METAL TOOL BOX

Size: 18 $\frac{1}{2}$ " x 6 $\frac{5}{8}$ " x 4 $\frac{1}{2}$ " high.

Designed for use where only a small number of tools are needed. Has metal suitcase type handle. Cover is held in place by three sturdy butt hinges and secured by two clasps. A latch on the front permits locking the box with a padlock.

E KRA-104 METAL TOOL BOX

Size: 14" x 5 $\frac{1}{8}$ " x 2 $\frac{1}{8}$ " high.

An excellent box for storing and protecting valuable parts or tools, in the shop or on the job—keeps them away from dust and misuse. Has two welded-on hinges and one clasp. Spot-welded construction. Red enamel finish.

F LOW COST METAL TOOL BOXES

Two Sizes Available.

Solid construction and low price make these tool boxes a fine value to the man with only a limited number of tools to protect. While made of slightly lighter metal than in our standard line of boxes, they are rugged enough to withstand years of normal use. Instead of usual handles, the ends are formed to provide finger grips and to provide ledges inside the box on which the KTA-4 Tote Tray rests. These boxes also have a strong suitcase-type handle at top. Box type cover is secured by two tension lever clasps, one of which can be padlocked. Finished in red enamel.

KRA-31 Metal Box with KTA-4 Tote Tray. Size: 20 $\frac{1}{2}$ " x 7 $\frac{3}{4}$ " x 7" deep.

KRA-30 Metal Box with KTA-4 Tote Tray. Size: 20 $\frac{1}{2}$ " x 8 $\frac{3}{4}$ " x 8 $\frac{3}{4}$ " deep.

G KTA-5 LARGE TOTE TRAY

Size: 18" x 10" x 4 $\frac{1}{2}$ " high.

This large, sturdy tray is extremely useful where a large assortment of tools must be

carried from job to job. It is a time-saver for mechanics in the shop or out on the job. A 10" x 6" shelf is handy for sockets or small tools. The high handle gives you plenty of knuckle clearance. Tray has four large rubber feet.

H KRA-406 SMALL HANG-ON TRAY

Size: 14" x 6" x 5 $\frac{1}{8}$ " deep.

Will hang on any Roll-Cab having a $\frac{3}{8}$ " or larger top lip or on the edge of a drawer. Does not attach permanently. It is handy for laying out small tools or parts.

J KRA-16 HANG-ON VALVE RACK

Has 16, 1 $\frac{1}{16}$ " diameter holes to hold valves during engine overhaul. Hangs on any cab or chest having a $\frac{1}{4}$ " or larger lip. 20 $\frac{1}{4}$ " x 4 $\frac{5}{8}$ " x 12 $\frac{1}{4}$ " long hanging lip.

K ROLL-CAB PUSH-BAR HANDLE

Hangs onto lip of Roll-Cab and is attached by drilling four holes in side of cab and bolting securely. Holes are factory drilled in handle bracket. Chromium plated bar.

KRA-402 Handle, with red bracket

KGA-402 Handle, with grey bracket

L KRA-412 FOLDING SHELF

Size: 15 $\frac{1}{2}$ " x 12" with $\frac{1}{4}$ " lip.

Bracket slips over raised lip of cab and shelf is hinged to the bracket . . . folds out of way when not needed. Bracket has drilled holes for bolting.

M DRAWER DIVIDERS

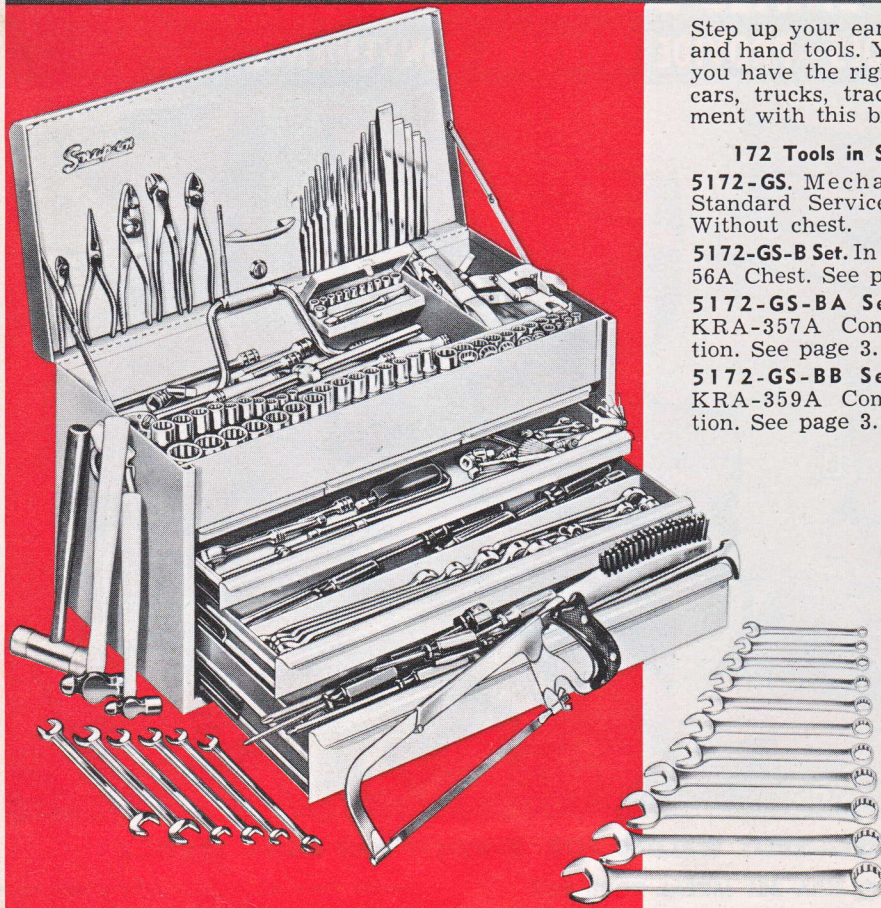
For partitioning any drawer 1" high or higher. Cut two lengths of slotted strip and one of divider strip and set in drawer as shown. Slots are $\frac{1}{32}$ " apart.

★**KRA-12 Set.** Consists of one slotted and one divider strip below.

★**KRA-10 Slotted Strip.** 32" long.

★**KRA-11 Divider Strip.** 32" long.

5172-GS-B *Snap-on* STANDARD SERVICE SET—172 TOOLS



Step up your earning power with this fine selection of wrenches and hand tools. You'll get more jobs completed in less time when you have the right tool ready for use when you need it. Service cars, trucks, tractors, power mowers, all kinds of farm equipment with this big set. It's a repair shop in a box.

172 Tools in Set

5172-GS. Mechanic's Standard Service Set. Without chest.

5172-GS-B Set. In KRA-56A Chest. See page 3.

5172-GS-BA Set. In KRA-357A Combination. See page 3.

5172-GS-BB Set. In KRA-359A Combination. See page 3.

Stock Number	Description	See Page
113-TM-B	Midget Wrench Set.....	17
247-F	Ferret Wrench Set.....	24
324-M	Master Wrench Set.....	30
DS-806	Ignition Wrench Set.....	58
LTA-806	Tappet Wrench Set.....	58
OEX-711	Combination Wrench Set....	61
PC-170-K	Chisel and Punch Set.....	67
RGP-50	Phillips Screw Driver Set...	64
RGS-70	Std. Screw Driver Set.....	64
XV-608	Offset Boxocket Set.....	52
XS-607	Dwarf Boxocket Set.....	53
47	Gripping Plier.....	69
50C	Midget Gripping Plier.....	69
87	Diagonal Cutter.....	70
92-PH	1 lb. Plastic Tip Hammer...	57
196	Needle Nose Plier.....	71
208A	Battery Plier.....	69
1650	Pry Bar.....	67
AC-58B	Wire Brush.....	93
BP-4	4 oz. Ball Peen Hammer...	57
BP-12	12 oz. Ball Peen Hammer...	57
CF-7B	Valve Key Replacer.....	74
CF-49A	Valve Lifter.....	74
CS-1	Carbon Scraper.....	93
FB-309W	Wire Spark Plug Gauge.....	49
FB-326	Feeler Gauge.....	49
GA-12	Screw Starter.....	65
HS-8	Hack Saw Frame.....	94
R-1618	Ratcheting Boxocket.....	55
S-9704B	Spark Plug Socket.....	88
SD-145	Spark Test Screw Driver....	64
VL-30	Valve Spring Compressor....	74

Snap-on NUT TURNING SET 5184-GS-B 184 WRENCHES

HANDLES EVERY TYPE OF NUT TURNING JOB

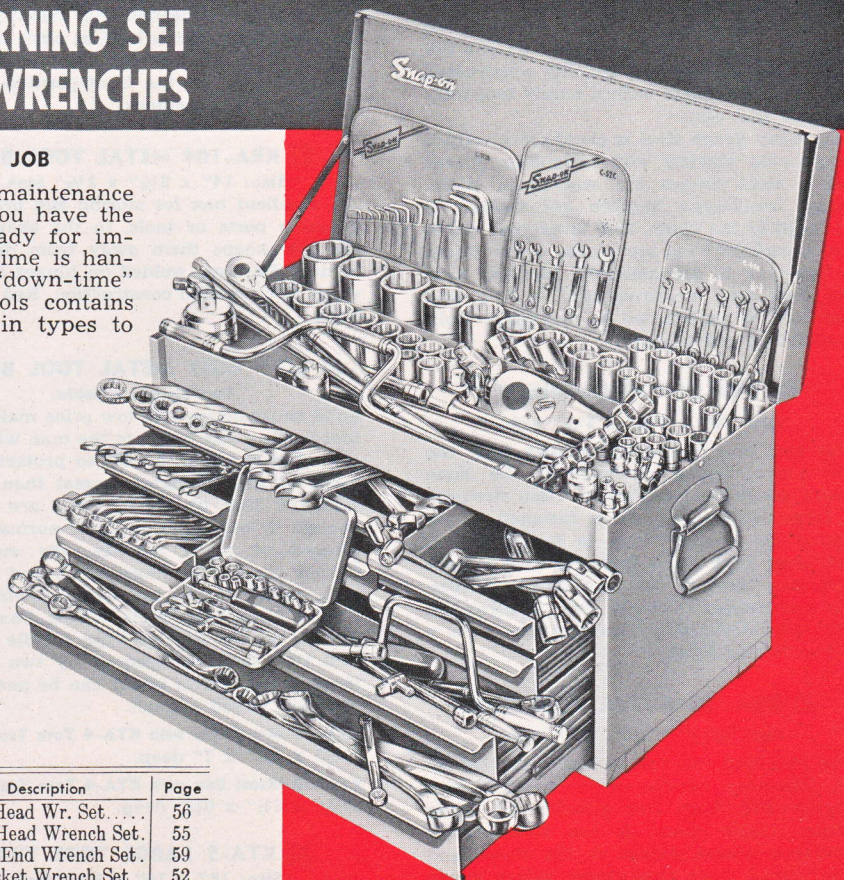
Ever think of this—that almost every machinery maintenance job starts and ends with wrench work? When you have the right kind and size of wrench for every job ready for immediate use, machinery repair and adjustment time is handled more safely, speedily, easily, with costly “down-time” held to a minimum. This assortment of 184 tools contains every standard wrench size from $\frac{3}{16}$ " to $1\frac{7}{8}$ " in types to handle every nut turning situation. The socket wrenches are segregated into four groups having $\frac{1}{4}$ ", $\frac{3}{8}$ ", $\frac{1}{2}$ ", and $\frac{3}{4}$ " square drive. The 5184-GS-B set also includes the very popular KRA-58B SNAP-ON tool chest shown at right. (See page 2 for complete description of this large, ruggedly built tool chest.)

5184-GS Maintenance Nut Turning Set. Without chest.

5184-GS-B Set. In KRA-58B Chest. See page 2.

5184-GS-BA Set. In KRA-362A Combination. See page 2.

5184-GS-BB Set. In KRA-360A Combination. See page 3.



Stock No.	Description	Page	Stock No.	Description	Page
120-TM-B	Midget Set.....	17	AW-1013-K	Hex Head Wr. Set.....	56
247-F	Ferret Set.....	24	FH-607	Flex-Head Wrench Set...	55
339-M	Master Set.....	31	VSO-811	Open End Wrench Set...	59
415-HD	Heavy Duty Set.....	33	XV-608	Boxocket Wrench Set...	52
DS-806K	Ignition Wrench Set...	58	XS-607	Boxocket Wrench Set...	53
OXI-705K	Comb. Wr. Set.....	61	RB-606	Ratch. Boxocket Set...	55

it's a **PAY CHECK** *stepper-upper!*

5244-GS-BB

GENERAL PURPOSE SET ON WHEELS

244 TIME SAVING TOOLS IN YOUR OWN ROLLING WORKSHOP

Here is the set you need to put your skill and mechanical know-how into a higher earning level. Every minute you spend using make-shift tools or trudging back and forth from the job to your tool container whittles away at your earning power.

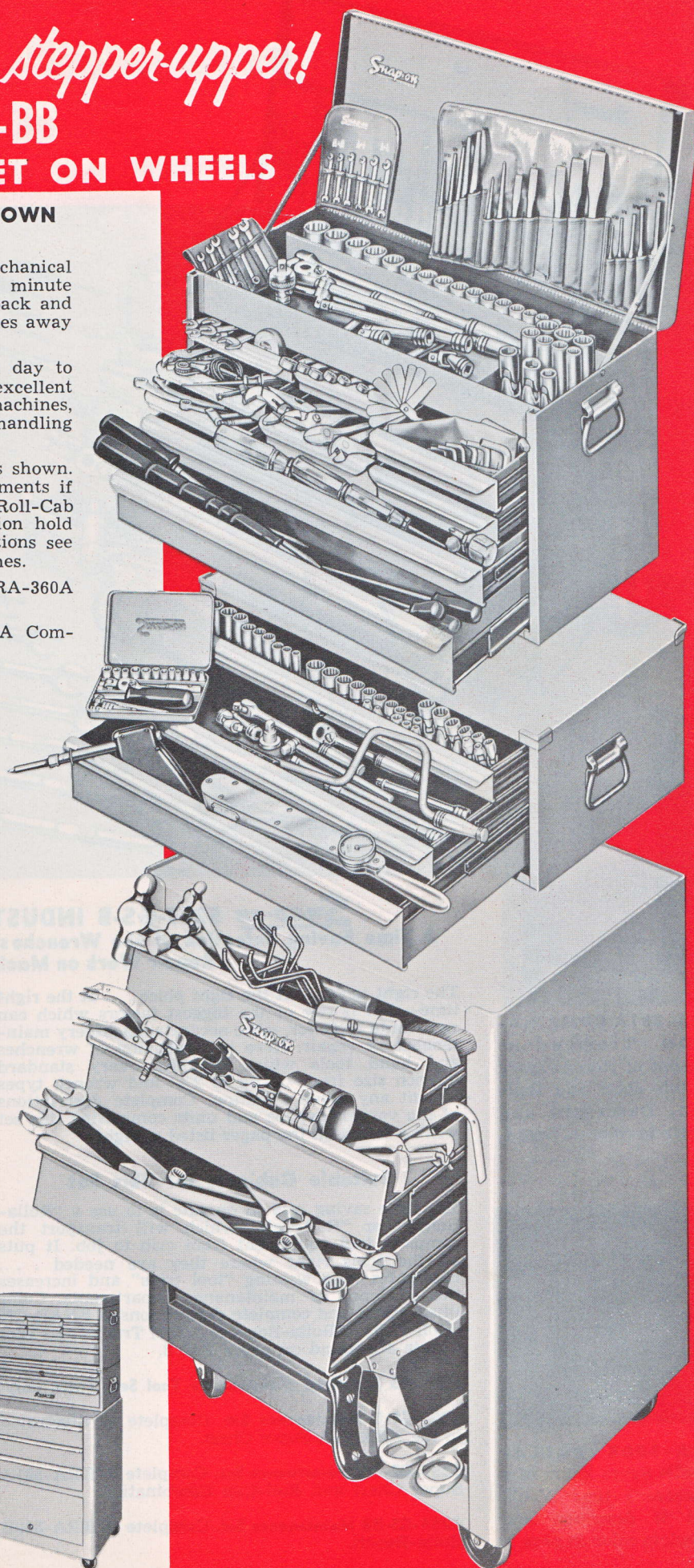
Each tool in this set will find regular use in day to day service and repair work. The set is an excellent choice for any mechanic who services factory machines, gas or diesel engines, cars and trucks, material handling equipment, aircraft, etc.

The Chest and Drawer Section are standard as shown. However, you can select other drawer arrangements if you wish. See page 2. A raised rim around the Roll-Cab top and corner retainers on the Drawer Section hold the three units in place. For complete descriptions see pages 2 and 3. Overall height closed is 52 inches.

5244-GS-BB Set. All tools listed below, in KRA-360A Combination as illustrated.

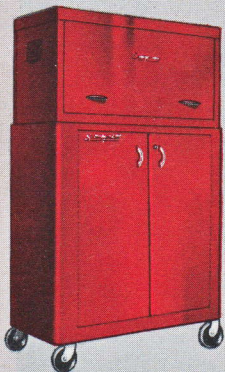
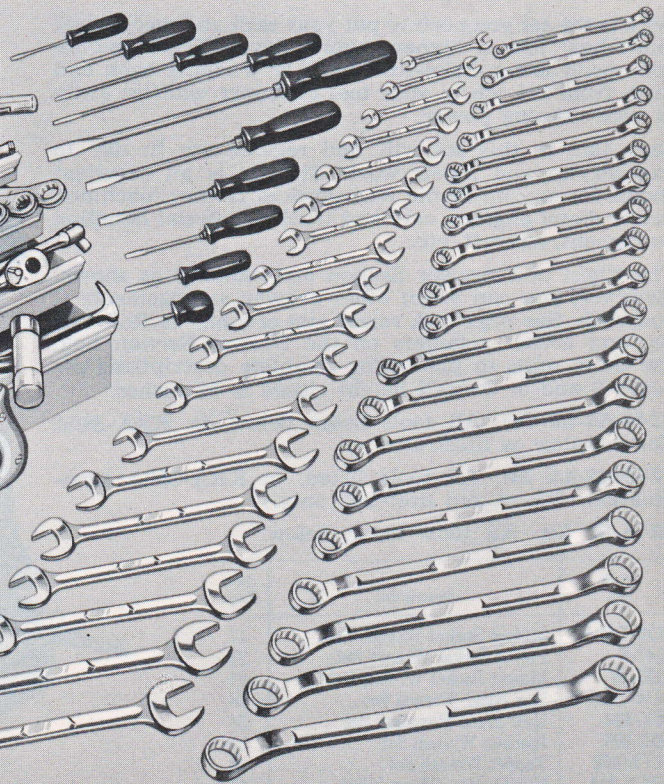
5244-GS-BA Set. All tools listed, in KRA-362A Combination. (Chest and Roll-Cab only.)

5244-GS Set. All tools listed below.



Stock No.	Description	See Page
120-TM-B	Midget Socket Wrench Set.....	17
247-F	Ferret Socket Wrench Set.....	24
339-M	Master Socket Wrench Set.....	31
AW-1013-K	Hex Head Wrench Set.....	56
CX-604	Half Moon Boxsocket Set.....	54
DS-806	Ignition Wrench Set.....	58
LTA-806	Tappet Wrench Set.....	58
OEX-714	Combination Wrench Set.....	61
OXI-705	Midget Combination Wrench Set.....	61
PC-170-K	Chisel and Punch Set.....	67
PL-70B	Set of Seven Pliers.....	69
RB-606	Ratcheting Boxsocket Set.....	55
RGP-50	Phillips Screw Driver Set.....	62
SSD-130	Std. Tip Screw Driver Set.....	62
XS-607	Dwarf Boxsocket Set.....	53
92-PH	1 lb. Plastic Tip Hammer.....	57
131A	Brake Spring Plier.....	82
1650	Pry Bar.....	67
AC-58B	Wire Brush.....	93
B-1356A	Brake Shoe Spring Compressor.....	82
B-1458	Brake Bleeding Wrench.....	83
B-1461	Brake Adjusting Tool.....	83
B-1462	Brake Adjusting Tool.....	83
B-1463	Brake Bleeding Wrench.....	83
BL-41A	Set of 4 Brake Cyl. Clamps.....	82
BP-4	4 oz. Ball Peen Hammer.....	57
BP-12	12 oz. Ball Peen Hammer.....	57
BP-32	2 lb. Ball Peen Hammer.....	57
CD-12	Tinners Snips.....	114
CF-7B	Valve Key Replacer.....	74
CF-49A	Valve Spring Compressor.....	74
CS-1	Carbon Scraper.....	93
CT-4A	Electric Circuit Tester.....	90
FB-309W	Spark Plug Gauge.....	49
FB-326	Feeler Gauge.....	49
GA-508	8 ft. Steel Tape Rule.....	94
H-50B	Hammer Head Screw Driver.....	65
HS-8	Hack Saw Frame.....	94
HS-13	Jab Saw.....	94
R-115B	Soldering Gun.....	95
RC-38B	Piston Ring Groove Tool.....	86
RC-40B	Piston Ring Compressor.....	86
S-9523	Chevrolet Brake Adj. Tool.....	83
TQ-150	Torqometer.....	47
V-22	Valve Adjusting Tool.....	74
VL-30	Valve Spring Compressor.....	74
VP-10WR	Vise Grip Wrench.....	49

INDUSTRIAL MAINTENANCE SET OF 259 *Snap-on* WRENCHES AND TOOLS



KRA-361A COMBINATION Tremendous amount of storage space in this chest and Roll-Cab. Described and shown in color on page 4.



KRA-300B ROLLA-BENCH Saves hours of a mechanic's time. You'll find it described and shown in color on page 7.

Snap-on 5259-GS-B INDUSTRIAL MAINTENANCE SET A Time Saving Selection of the Wrenches and Hand Tools Frequently Needed for Repair Work on Machinery of All Types

The right tool . . . at the right place . . . at the right time—that is one of the biggest factors which can contribute to faster, more accurate machinery maintenance or repair. Here is a selection of wrenches and hand tools which provides every standard wrench size from $\frac{1}{4}$ " up to $2\frac{3}{4}$ " and wrench types to suit any given situation. Complete descriptions of the various groups and units comprising this set will be found on the pages listed at right.

Suitable Cabinets for This Set

The time saving way to operate is to use a "Rolla-Bench" or "Roll-Cab" which will transport the complete tool equipment from crib to job. It puts all the tools right where they are needed . . . eliminates time wasting "tool trips" and increases the efficiency of maintenance departments. Color illustrations and complete descriptions of SNAP-ON "Roll-Cabs," "Rolla-Benches," Tool Trucks and Tool Chests are found on pages 2 to 8.

5259-GS Industrial Maintenance Tool Set. Tools only.

5259-GS-B Maintenance Set. Complete as illustrated in the KRA-61A Super Chest.

5259-GS-BA Maintenance Set. Complete in KRA-361A Super Chest and Roll-Cab Combination.

5259-GS-BB Maintenance Set. Complete in KRA-300B Rolla-Bench.

Contents of the 5259-GS Industrial Maintenance Set

Stock Number	Description	See Page
247-F	Ferret Socket Wrench Set	24
377-M	Master Socket Wrench Set	30
425-HD	Heavy Duty Socket Wrench Set	33
VSO-820	Open End Wrench Set	59
XV-619	Boxocket Wrench Set	52
RB-606	Ratcheting Boxocket Set	55
AW-1013-K	Hex Head Wrench Set	56
SSD-130	Screw Driver Set	62
SSDP-60	Phillips Screw Driver Set	63
PC-170-K	Chisel & Punch Set	67
PL-70B	Set of 7 Pliers, Nos. 9C, 50C, 47, 65, 87, 196, 208B	69
No. 1650	Pry or Jimmy Bar	67
H-50B	Offset Screw Driver	65
BP-4	4 oz. Ball Peen Hammer	57
BP-12	12 oz. Ball Peen Hammer	57
BP-32	2 lb. Ball Peen Hammer	57
92-PH	1 lb. Plastic Tip Hammer	57
HS-13	Jab Saw	94
HS-8	Hack Saw	94
GA-524	12 ft. Steel Tape Rule	94

Snap-on No. 5545-GS-B SHOP-MASTER SET FOR GENERAL AUTOMOTIVE SERVICE

545 TOOLS AND SPECIALIZED SETS ESSENTIAL FOR COMPLETE SERVICE

No matter how skillful a man may be or how much mechanical knowledge he may have he still cannot work without tools. In order to operate efficiently and turn out the type of service and repair work that builds customer satisfaction and brings a profitable return on his labor, the mechanic who wants to get ahead considers a complete tool set an investment in his future.

Here is such a set. It contains all types of wrench equipment in complete ranges of sizes and includes Impact and Torque wrenches. Every standard type of mechanics tool is provided together with special tools for brake service, valve work, etc. The selection also includes instruments and gauges for engine tune-up, tap and die sets, an electric drill, interchangeable gear puller parts, and many other items, even a seat cover and fender cover. Adding mobility to the Shop-Master Set is the KRA-352A Roll-Cab, KRA-429 Drawer Section and KR-59A Tool Chest.

Invest in your future NOW. Your SNAP-ON dealer can arrange a SNAP-ON conditional sales contract for you.

5545-GS-B Shop-Master Set. Contains all items listed below.

5545-GS Set. Above set, but without the KR-59A Chest, KTA-3 Tote-tray, KRA-429 Drawer Section and KRA-352A Roll-Cab.



Stock Number	Description	See Page	Stock Number	Description	See Page	Stock Number	Description	See Page
169-TM-B	Midget Socket Wrench Set.....	20	92-PH	1/2 lb. Plastic Tip Hammer.....	57	HS-12	Hack Saw Frame.....	94
298-F	Ferret Socket Wrench Set.....	24	96	7/16" Needle Nose Plier.....	71	IMB-8A	Impact Universal Joint.....	45
377-M	Master Socket Wrench Set.....	30	131A	Brake Spring Plier.....	71	KRA-415	Rack for MT-402 and MT-415B.....	131
415-HD	Heavy Duty Socket Wrench Set.....	33	208A	7/32" Battery Plier.....	69	MT-104	Distributor Point Gauge.....	81
309-IMB	Set-Impact Flexockets.....	42	650	6" Pry Bar.....	67	MT-402A	Alternator-Regulator Tester.....	130
312-P	Set-Impact Hex Sockets.....	44	715-FF	15" Flexible Gripping Tool.....	90	MT-415B	Tach-Dwell Meter.....	130
A-157A	Bushing Driver Set.....	111	1650	16" Pry Bar.....	67	PF-23	1/4" Tip Impact Screw Driver.....	23
CJ-282A	Gear Puller Set.....	109	A-91	Strap Wrench.....	88	PF-25A	5/16" Tip Impact Screw Driver.....	23
CX-604	Half Moon Boxsocket Set.....	54	A-161A	Door Panel Remover.....	114	PF-31A	3/8" Tip Impact Screw Driver.....	23
DB-113	Drill Set—1/16" to 1/4".....	98	AC-58B	Wire Brush.....	93	PF-100	5/16" Impact Hex Socket.....	44
DS-806-K	Ignition Wrench Set.....	58	ACD-12	Distributor Cleaning Brush.....	81	PF-120	3/8" Impact Hex Socket.....	44
E-1020	Screw & Stud Extractor Set.....	32	B-1458	Brake Bleeder Wrench.....	83	PF-140	7/16" Impact Hex Socket.....	44
FH-607-B	Flexhead Wrench Set.....	55	B-1461	Brake Adjusting Tool.....	83	PF-160	1/2" Impact Hex Socket.....	44
LTA-808	Tappet Wrench Set.....	58	B-1462	Brake Adjusting Tool.....	83	PF-180	9/16" Impact Hex Socket.....	44
MT-308C-B	Compression Gauge Set.....	122	B-1463	Brake Bleeder Wrench.....	83	PF-200	5/8" Impact Hex Socket.....	44
MT-311B-B	Vacuum Gauge Set.....	122	B-3404B	Brake Adjusting Tool.....	83	PIT-12	Impak Driver.....	25
OC-40	Oil Can Set.....	92	BL-41A	Brake Cyl. Clamp Set.....	82	PJ-10	Snap-ring Plier.....	71
OEX-714	Long Combination Wrench Set.....	61	BP-4	4 oz. Ball Peen Hammer.....	57	PS-6	5" Impact Extension Bar.....	44
OEXS-708	Short Combination Wrench Set.....	61	BP-12	12 oz. Ball Peen Hammer.....	57	PSP-32A	No. 3 Impact Phillips Driver.....	43
PC-170-K	Chisel and Punch Set.....	67	BP-20	1 1/4 lb. Ball Peen Hammer.....	57	PSP-42A	No. 4 Impact Phillips Driver.....	43
PWA-904	Pipe Wrench Set.....	56	BP-32	2 lb. Ball Peen Hammer.....	57	PSW-284A	7/16" Tip Impact Screw Driver.....	43
RB-606	Ratcheting Boxsocket Set.....	55	BP-48	3 lb. Ball Peen Hammer.....	57	PSW-325A	1/2" Tip Impact Screw Driver.....	43
RXV-607A	Flare Nut Wrench Set.....	54	CDS-10	Tinners Snips.....	114	PT-6	6" Magnetic Pick-up Tool.....	90
SCD-30	Cabinet Screwdriver Set.....	64	CF-1-E	"C" Type Valve Lifter.....	74	PT-27	27" Magnetic Pick-up Tool.....	90
SS-30N	Screw Starter Set.....	65	CF-7B	Valve Key Replacer.....	74	S-9523	Chevy Brake Adjusting Tool.....	83
SSDS-60	Standard Screw Driver Set.....	62	CF-49A	Screw-Type Valve Lifter.....	74	S-9478B	Chrysler Door Handle Tool.....	114
SSDP-60	Phillips Screwdriver Set.....	63	CF-63	Brake Cylinder Hone.....	82	S-9542A	Brake Bleeding Wrench.....	83
TD-2400A	Tap-Die Set—1/4" to 1/2".....	102	CF-71	Spark Plug Gapping Tool.....	90	S-8678SB	Step Feeler Gauge.....	49
TD-2500	Tap-Die Set—4-36, to 12-24.....	102	CK-6A	Fender Cover.....	91	SD-145	Spark Testing Screw Driver.....	64
VSO-815	Open-End Wrench Set.....	59	CK-15A	Seat Cover.....	91	SSDP-102	Long No. 2 Phillips Driver.....	62
XI-604A-K	Midget Boxsocket Set.....	53	CS-12A	Carbon Scraper.....	93	ST-012A	1 & 2 Phillips Offset Driver.....	65
XV-619	Boxsocket Wrench Set.....	52	CT-4A	Circuit Tester.....	90	ST-034A	3 & 4 Phillips Offset Driver.....	65
020	1/4" Offset Screwdriver.....	65	DHP-8A	G. M. Door Handle Tool.....	114	TK-50	Dist.-Regulator Tool Kit.....	81
030	5/16" Offset Screwdriver.....	65	EDS-25	1/4" Electric Drill.....	96	TK-104	Distributor Rubbing Block Set.....	81
6-M	6" Mill File.....	99	EW-475	Electric Impact Wrench.....	42	TQ-12B	Torqometer, 0-150 Inch Pound.....	47
095	5 1/8" Needle Nose Plier.....	71	FB-309W	Wire Spark Plug Gauge.....	49	TQ-150	Torqometer, 0-150 Foot Pound.....	47
8-HR	8" Half-Round File.....	99	FB-325	General Use Feeler Gauge.....	49	TQ-250	Torqometer, 0-250 Foot Pound.....	47
9C	8 3/4" Gripping Plier.....	69	GA-51A	16 1/2" Inspection Mirror.....	90	V-22	Overhead Valve Adjusting Tool.....	74
10-M	10" Mill File.....	99	GA-73A	Brake Pedal Jack.....	82	KRA-59A	Large Tool Chest.....	3
47	7 1/2" Gripping Plier.....	69	GA-98	Adjustable File Handle.....	99	KTA-3	Tool Tote Tray.....	3
50C	5" Gripping Plier.....	69	GCP-10	Grease Cap Plier.....	84	KRA-429	Drawer Section.....	2
70A	Lock Washer Plier.....	71	H-508	Hammerhead Screw Driver.....	65	KRA-352A	Roll-Cab.....	2
85	4 7/8" Diagonal Cutter.....	70	HB-5	Ignition Point File.....	81			
87	7 1/4" Diagonal Cutter.....	70	HCP-48BP	Hose Clamp Plier.....	91			

FOR BODY REPAIR MECHANICS

Snap-on 2172-BR-B SET

172 TOOLS NEEDED IN BODY SHOP WORK

In addition to the particular tools of his craft, the specialist in body repair work needs a wide variety of standard wrenches and tools. Here in one complete set is a time saving selection of those units which most "body" men need to do the work quickly, safely, profitably.

Number	Description	Page
137-TM-B	Midget Wrench Set.....	20
210-SFS	Deep Hex Socket Set.....	23
220B-F	Ferret Wrench Set.....	25
324-M	Master Wrench Set.....	30
AW-1013K	Hex Head Wrench Set.....	56
OEKS-708	Combination Wrench Set.....	61
PC-170-K	Chisel & Punch Set.....	67
RB-606	Ratcheting Boxsocket Set.....	55
SSDP-60	Phillips Screw Driver Set.....	63
SSDS-60	Std. Screw Driver Set.....	62
XV-605	Boxsocket Set.....	52
No. 17	7 1/4" End Cutter.....	70
No. 47	7 1/2" Gripping Plier.....	69
No. 87	7 1/4" Diagonal Cutter.....	70
No. 1650	Pry Bar.....	67
BP-16	1 lb. Ball Peen Hammer.....	57
BP-32	2 lb. Ball Peen Hammer.....	57
BP-48	3 lb. Ball Peen Hammer.....	57
FP-22A	No. 2 Phillips Bit Socket.....	23
FP-32A	No. 3 Phillips Bit Socket.....	23
FP-41B	No. 4 Phillips Bit Socket.....	23
F-29A	3/8" Clutch Bit Socket.....	23
F-30	19/64" Clutch Bit Socket.....	23
FIM-100	5/16" Self-Tap Screw Socket.....	44
FIM-120	3/8" Self-Tap Screw Socket.....	44
FIM-140	7/16" Self-Tap Screw Socket.....	44
FIM-160	1/2" Self-Tap Screw Socket.....	44
GA-12	Screw Starter.....	65
PK-121	3/8" Self-Tap Screw Socket.....	44
PK-141	7/16" Self-Tap Screw Socket.....	44
PK-161	1/2" Self-Tap Screw Socket.....	44

See pages 114 to 117 for
Specialized Body Repair
Tools and Equipment.

Number	Description	Page
PK-181	9/16" Self-Tap Screw Socket.....	44
PW-14A	14" Pipe Wrench.....	56
SD-18	18" H. D. Screw Driver.....	62
ST-012A	1 & 2 Phillips Offset Sc. Dr.....	65
ST-034	3 & 4 Phillips Offset Sc. Dr.....	65
VP-7R	7" Vise-Grip Wrench.....	49
VP-8R	Vise-Grip Bending Tool.....	49
VP-9R	Vise-Grip Welding Clamp.....	49
VP-10R	10" Vise-Grip Wrench.....	49
VP-11R	Vise-Grip "C" Clamp.....	49



2172-BR-B Body Repair Set. In KRA-58B Tool Chest illustrated and described on page 2.

2172-BR Set. Above set, tools only.

For BRAKE SERVICE MECHANICS

Snap-on 2035-BT-B SET

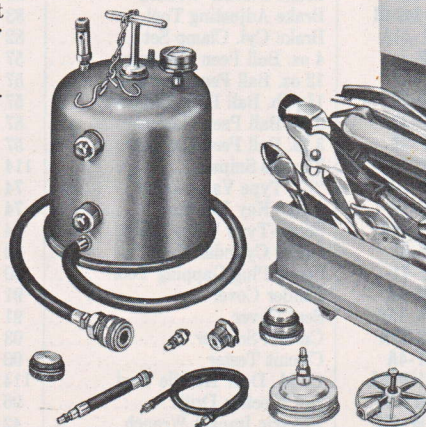
35 SPECIAL TOOLS FOR BRAKE WORK

The special tools you need for profitable brake service, in one compact kit. Buy it complete with the Mechanikit and keep your brake tools together for quick selection.

2035-BT-B Brake Service Set. In KRA-21 Mechanikit shown and described on page 5.

2035-BT Set. Above set, tools only.

Number	Description	Page
No. 70A	Lock Washer Plier.....	71
No. 87	7 1/4" Diagonal Cutter.....	70
No. 90	9 1/4" Gripping Plier.....	69
No. 92PH	1 lb. Plastic Tip Hammer.....	57
No. 131A	Brake Spring Plier.....	82
No. 231	Truck Brake Spring Plier.....	82
B-100C	Brake Bleeding Tank.....	82
B-1351A	Bendix Brake Wrench.....	83
B-1356A	Brake Spring Compressor.....	82
B-1456A	3/8" & 7/16" Brake Bleeder Wrench.....	83
B-1458	1/4" & 3/8" Brake Bleeder Wrench.....	83
B-1459	3/8" Brake Adjusting Wrench.....	83
B-1460B	3/8" & 7/16" Brake Wrench.....	83
B-1461	Brake Adjusting Tool.....	83
B-1462	Brake Adjusting Tool.....	83
B-1463	Bleeder Wrench for Compacts.....	83
B-3404B	Brake Adjusting Tool.....	83
BL-41A	Set of 4 Cylinder Clamps.....	82
BP-16	1 lb. Ball Peen Hammer.....	57
CF-63	Cylinder Glaze Hone.....	82

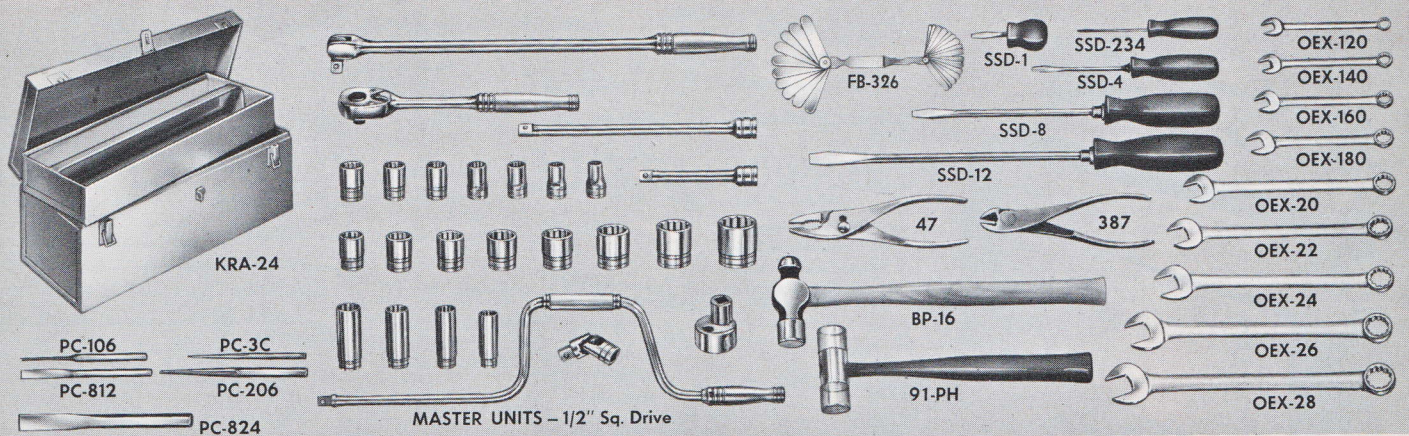


Number	Description	Page
CP-3A	Cotter Pin Puller.....	67
GA-72	"C" Washer Plier.....	82
GA-73A	Brake Pedal Jack.....	82
GCP-10	Grease-Hub Cap Tool.....	84
RXV-1214S	3/8" and 7/16" Flarenut Wrench.....	54
S-6404	Falcon Brake Spring Tool.....	82
S-9153B	Pontiac Brake Tool.....	83
S-9481A	Pontiac Brake Tool.....	82



No.	Description	Page
S-9523	Chevrolet Brake Tool.....	83
S-9442A	3/8" Brake Bleeding Wrench.....	83
SSD-4	1/4" Tip, 4" Blade Screw Driver.....	62
SSD-8	3/8" Tip, 8" Blade Screw Driver.....	62

5050-GS-B *Snap-on* APPRENTICE TOOL SET—50 Tools



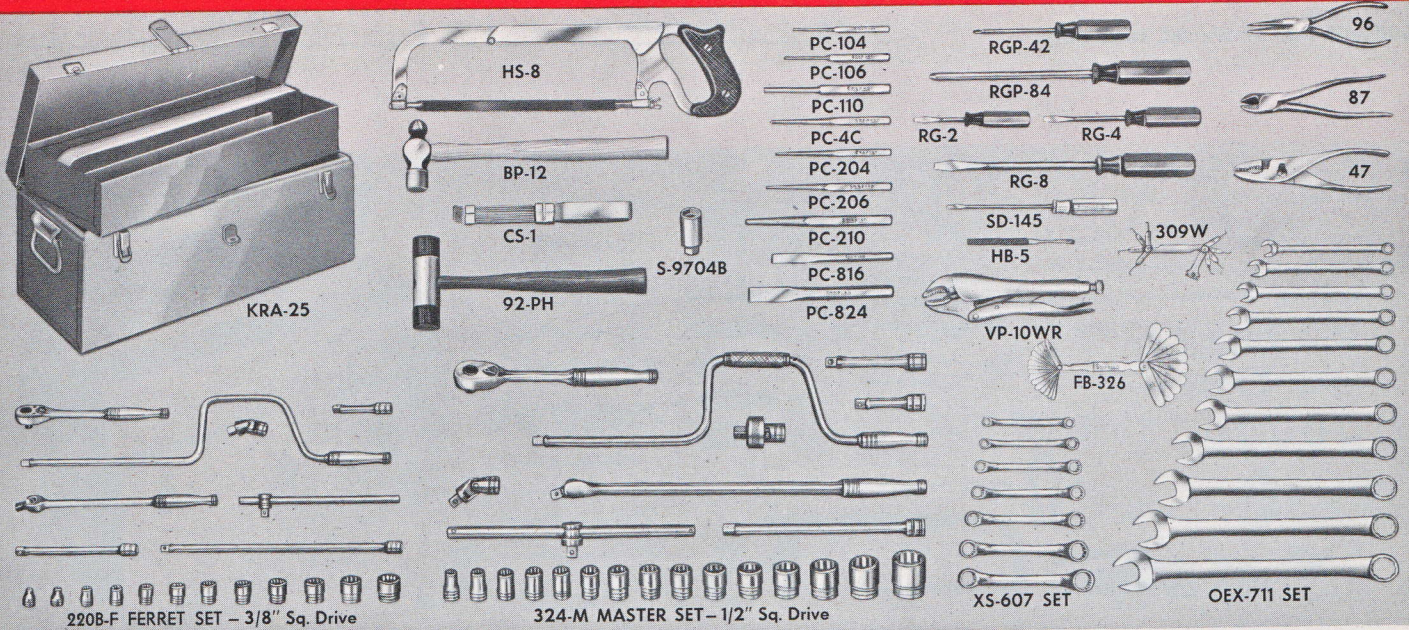
CONTAINS 50 POPULAR TOOLS

5050-GS-B Apprentice Tool Set. A set of $\frac{1}{2}$ " square drive socket wrenches and mechanics basic service tools, especially selected so that you can add additional units as your earnings increase until you have built up a complete automotive technicians set. This set will enable you to perform a great many service and repair operations speedily and efficiently—with a very low initial investment in fine quality tools. Complete in the KRA-24 Mechanikit. (See page 9.)

5050-GS Set. Tools only.

Stock No.	Description	See Page	Stock No.	Description	See Page	Stock No.	Description	See Page
L-710	Ratchet Wrench	26	OEX-120	$\frac{3}{8}$ " Comb. Wr.	60	SSD-234	$\frac{1}{8}$ " Tip Sc. Dr.	62
K-4L	Speeder—19 $\frac{1}{2}$ "	27	OEX-140	$\frac{7}{16}$ " Comb. Wr.	60	PC-812	$\frac{3}{8}$ " Blade Chisel	66
SN-18M	Nut Spinner—18"	27	OEX-160	$\frac{1}{2}$ " Comb. Wr.	60	PC-824	$\frac{5}{8}$ " Blade Chisel	66
SX-5	5" Extension Bar	27	OEX-180	$\frac{9}{16}$ " Comb. Wr.	60	PC-206	$\frac{3}{16}$ " Starter Pun.	66
SX-10	10" Extension Bar	27	OEX-20	$\frac{5}{8}$ " Comb. Wr.	60	PC-106	$\frac{3}{16}$ " Drift Punch	66
8L	Universal Joint	27	OEX-22	$\frac{11}{16}$ " Comb. Wr.	60	PC-3C	Center Punch	66
315A-SW	Dbl. Hex Socket Set $\frac{1}{16}$ " to $\frac{1}{4}$ "	29	OEX-24	$\frac{3}{4}$ " Comb. Wr.	60	BP-16	1lb. B-Peen Ham.	57
S-201	$\frac{5}{8}$ " Deep Sock.	28	OEX-26	$\frac{13}{16}$ " Comb. Wr.	60	91-PH	8 oz. Sof-tip Ham.	57
S-221	$\frac{11}{16}$ " Deep Sock.	28	OEX-28	$\frac{7}{8}$ " Comb. Wr.	60	FB-326	Feeler Gauge	57
S-241	$\frac{3}{4}$ " Deep Sock.	28	SSD-1	$\frac{1}{2}$ " Sc. Driver	62	47	Gripping Plier	68
S-261	$\frac{13}{16}$ " Deep Sock.	28	SSD-4	4" Screw Driver	62	387	Diagonal Cutter	69
A-50	Stud Remover	32	SSD-8	8" Screw Driver	62	KRA-24	Mechanikit	9
			SSD-12	12" Screw Driver	62			

5089-GS-B *Snap-on* MECHANICS BASIC SERVICE TOOL SET—89 Tools



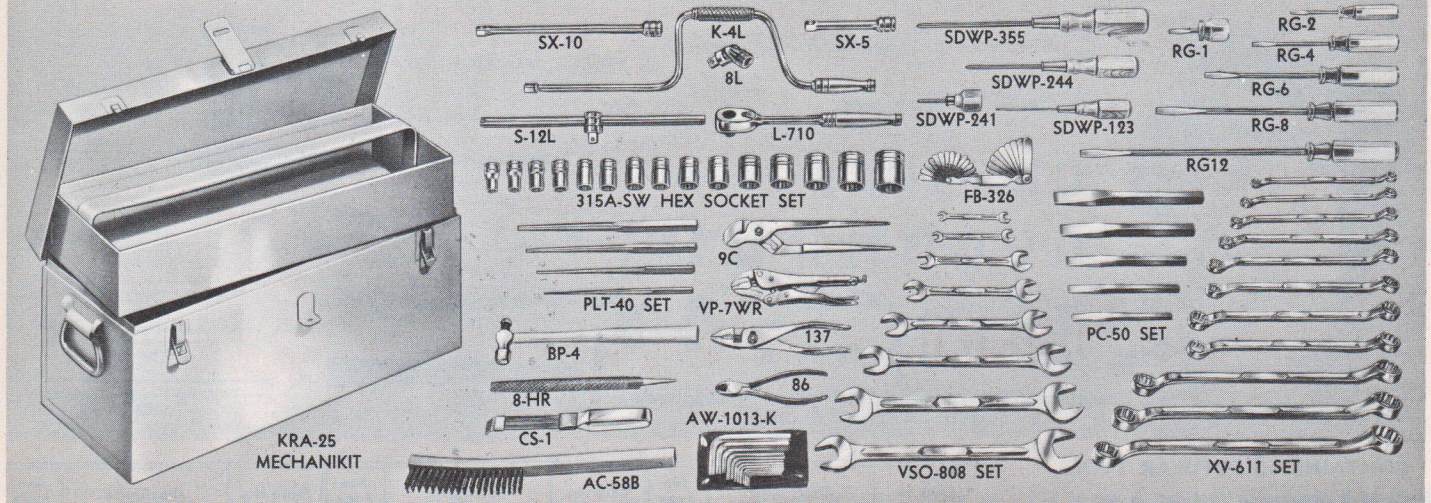
89 MOST NEEDED SERVICE TOOLS

5089-GS-B Mechanics Basic Tool Set. This set is a well balanced selection of tools especially suitable for the man starting to build up his kit. It provides a basic set of Ferret $\frac{3}{8}$ " square drive and Master $\frac{1}{2}$ " square drive socket wrenches together with Boxocket and Combination wrenches and the most essential hand tools, a set to which other units can be added as the need arises. Every tool will find practical use in everyday service operations. Set comes complete with the KRA-25 Mechanikit described on page 9.

5089-GS Set. Above Set tools only.

Stock No.	Description	See Page	Stock No.	Description	See Page
220B-F	Ferret Wrench Set	25	PC-106	$\frac{3}{16}$ " Drift Punch	66
324-M	Master Wrench Set	30	PC-110	$\frac{1}{2}$ " Drift Punch	66
OEX-711	Combination Wrench Set	61	PC-204	$\frac{3}{16}$ " Starter Punch	66
XS-607	Boxocket Wrench Set	52	PC-206	$\frac{1}{4}$ " Starter Punch	66
No. 47	$\frac{7}{16}$ " Gripping Plier	69	PC-210	$\frac{1}{2}$ " Starter Punch	66
No. 87	$\frac{7}{16}$ " Diagonal Cutter	70	PC-816	$\frac{1}{2}$ " Blade Chisel	66
No. 96	$\frac{7}{16}$ " Needle Nose Plier	71	PC-824	$\frac{3}{4}$ " Blade Chisel	66
No. 92PH	1 lb. Plastic Tip Hammer	57	RG-2	2 $\frac{1}{2}$ " Blade Screw Driver	64
BP-12	12 oz. Ball Peen Hammer	57	RG-4	6" Blade Screw Driver	64
CS-1	Carbon Scraper	93	RG-8	8" Blade Screw Driver	64
S-9704B	Spark Plug Wire Gauge	49	No. 2 Phillips Screw Driver	64	
FB-326	Feeler Gauge	49	RG-P-84	No. 4 Phillips Screw Driver	64
HB-5	Ignition Point File	81	SD-145	Spark Test Screw Driver	64
S-8	Hack Saw Frame	94	S-9704B	Spark Plug Socket	88
PC-4C	Center Punch	68	VP-10 WR	10" Vise-Grip Wrench	49
PC-104	$\frac{3}{8}$ " Drift Punch	66	KRA-25	Mechanikit	9

5081-GS-B POPULAR SERVICE SET



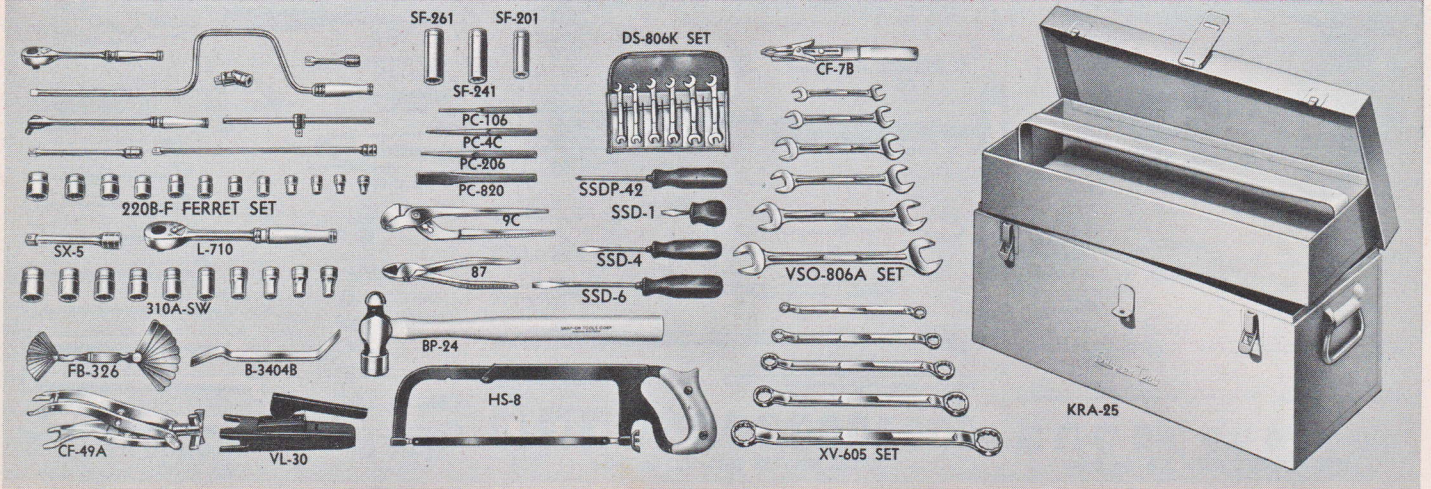
81 WRENCHES AND TOOLS NEEDED IN EVERY-DAY SERVICE WORK

5081-GS-B POPULAR SERVICE TOOL SET. Every service mechanic needs the basic tools included in this set and it provides an excellent assortment for the young man who is entering the mechanic trade. The ambitious man will set up a carefully planned program of tool purchases that will gradually build his tool kit to professional standards. All the sockets and handles in the set are half-inch square drive with a socket range of $\frac{7}{16}$ " to $1\frac{1}{4}$ ". Boxsocket sizes range from $\frac{3}{8}$ " to $1\frac{1}{4}$ " and Open Ends from $\frac{1}{4}$ " to $1\frac{1}{4}$ ". Set includes KRA-25 Mechanikit. (See page 9.)

5081-GS Set. Above set, tools only.

Stock No.	Description	See Page	Stock No.	Description	See Page
8-L	Universal Joint	27	AC-58B	Wire Brush	93
L-710	Ratchet Wrench	26	BP-4	4 Oz. Ball Peen Hammer	57
S-12L	Sliding Bar Handle	27	CS-1	Carbon Scraper	93
SN-4M	Spinner—Speeder Handle	27	FB-326	Feeler and Ignition Gauge	49
SX-5	5" Extension Bar	27	RG-1	Screwdriver $\frac{1}{4}$ " Tip— $1\frac{1}{2}$ " Blade	64
SX-10	10" Extension Bar	27	RG-2	Screwdriver $\frac{3}{16}$ " Tip— $2\frac{1}{2}$ " Blade	64
315A-SW	Double Hex Socket Set	29	RG-4	Screwdriver $\frac{1}{4}$ " Tip—4" Blade	64
AW-1013-K	Set of 13 Hex Head Wrenches	56	RG-6	Screwdriver $\frac{3}{16}$ " Tip—6" Blade	64
PC-50	Set of 5 Flat Chisels	67	RG-8	Screwdriver $\frac{1}{8}$ " Tip—8" Blade	64
PLT-40	Set of 4 Long Tapered Punches	67	RG-12	Screwdriver $\frac{13}{32}$ " Tip—12" Blade	64
VSO-808	Open End Wrench Set	59	SDWP-241	Phillip's Driver, #2 Bit— $1\frac{1}{2}$ " Blade	65
XV-611	Offset Boxsocket Wrench Set	52	SDWP-123	Phillip's Driver, #1 Bit— $3\frac{1}{4}$ " Blade	65
8-HR	8" Half Round File	99	SDWP-244	Phillip's Driver, #2 Bit—4" Blade	65
9C	8 $\frac{3}{4}$ " Gripping Plier	69	SDWP-355	Phillip's Driver, #3 Bit—6" Blade	65
86	6" Diagonal Cutter	70	VP-7WR	10" "Vise-Grip" with Cutter	49
137	7 $\frac{1}{2}$ " Combination Plier	69			

5069-GS-B VERSATILE SERVICE SET



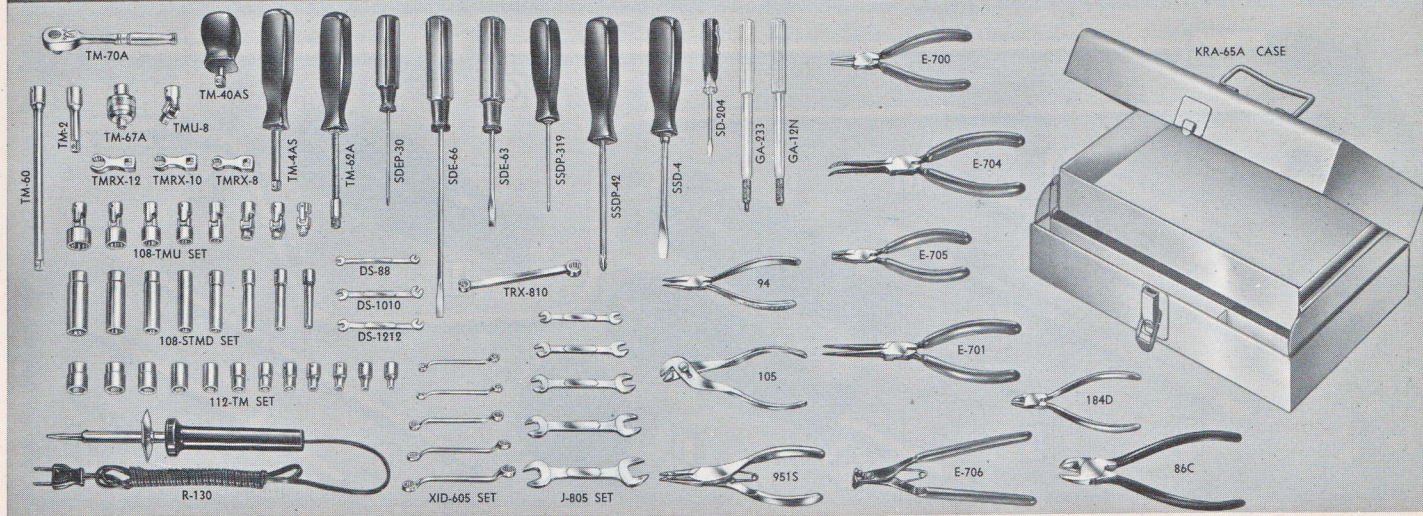
69 TOOLS EVERY MECHANIC NEEDS

5069-GS-B Versatile Service Tool Set. No two mechanics will choose exactly the same tool selection, but here is an assortment of the most essential tools for general service work that will give any mechanic a sound foundation to which can be added other tools as needed. Wrench sizes range from $\frac{3}{8}$ " hex to $\frac{7}{8}$ " in sockets, Boxsockets and open-ends. A versatile selection of mechanics hand tools and special tools for valve and brake work rounds out the set. Set is complete with the KRA-25 Mechanikit described on page 9.

5069-GS Set. Above set, tools only.

Stock Number	Description	See Page	Stock Number	Description	See Page
220B-F	Ferret Wrench Set	25	SSD-1	Screw Driver $\frac{1}{4}$ " tip— $1\frac{1}{2}$ " blade	62
SF-201	$\frac{5}{8}$ " Ferret Deep Hex Socket	22	SSD-4	Screw Driver $\frac{1}{4}$ " tip—4" blade	62
SF-241	$\frac{3}{4}$ " Ferret Deep Hex Socket	22	SSD-6	Screw Driver $\frac{5}{16}$ " tip—6" blade	62
SF-261	$\frac{13}{16}$ " Ferret Deep Hex Socket	22	SSDP-42	No. 2 Phillips Screw Driver	63
L-710	Master Ratchet Wrench	26	PC-820	$\frac{5}{8}$ " edge Chisel	66
SX-5	5" Master Extension	27	PC-4C	Center Punch	66
310A-SW	Master Hex Socket Set	29	PC-206	Starter Punch	66
XV-605	Boxsocket Wrench Set	52	PC-106	Drift Punch	66
VSO-806A	Open-End Wrench Set	59	FB-326	Feeler Gauge	49
DS-806K	Ignition Wrench Set	58	B-3404B	Brake Adjusting Tool	83
BP-24	1 $\frac{1}{2}$ lb. Ball Peen Hammer	57	CF-49A	Valve Lifter	74
No. 87	7 $\frac{1}{2}$ " Diagonal Cutter	70	CF-7B	Valve Key Replacer	74
No. 9C	8 $\frac{3}{4}$ " Gripping Plier	69	VL-30	Valve Spring Compressor	74
HS-8	Hack Saw Frame	94			

5073-ET-B BASIC ASSEMBLY MIDGET TOOL SET



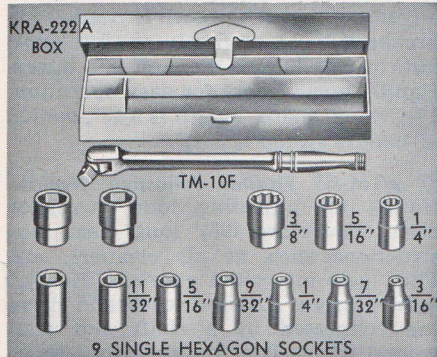
73 TIME SAVING TOOLS FOR MINIATURE ASSEMBLY OPERATIONS

5073-ET-B Basic Assembly Midget Set. Recommended for production assembly of all types of electronic and electrical instruments and for the maintenance and adjustment of such equipment. The tiny wrenches are machined to close tolerance specifications to provide access to fastenings in closely fitted assemblies. Smooth, well-shaped and balanced handles put added efficiency into the hands of assembly line

operators. Screwdrivers have tips the same width as the diameter of the thin blades so that they can follow into screw holes. The eighteen-watt, pencil-type soldering iron maintains a constant 850 degree F. tip temperature for work on tiny assemblies or on printed circuits. Set includes the KRA-65A Tool Case described on page 5.

5073-ET Set. Above set without the tool case.

Stock No.	Description	See Page	Stock No.	Description	See Page	Stock No.	Description	See Page
TM-2	2" Extension Bar	18	184D	4 1/4" Semi-flush Cutter Plier	68	J-805A	Set—5 Short Open End Wrenches	58
TM-4AS	Plastic Grip Handle, 2" Shank	18	951S	5 1/2" Electronic Gripper-Cutter	68	R-130	Pencil-Type Soldering Iron	95
TM-40AS	Plastic Grip Handle, 3/8" Shank	18	SD-204	Screwdriver, 1/8" tip—2" blade	64	SDE-63	Screwdriver, 3/16" Tip—3" Blade	63
TM-60	6" Extension Bar	18	E-700	Wire Looper Plier	68	SDE-66	Screwdriver, 3/16" Tip—6" Blade	63
TM-62A	Flexible Drive Handle	18	E-701	6 1/2" Needle Nose Plier	68	SDEP-30	Philips Screwdriver, No. 0 Bit, 3" Blade	62
TM-67A	Ratchet Adaptor	18	E-704	6 1/2" Bent Needle Nose Plier	68	SSD-4	Screwdriver, 1/4" Tip—4" Blade	62
TM-70A	Ratchet Wrench	18	E-705	4 1/2" End Cutter, 1/8" wide tip	68	SSDP-319	Philips Screwdriver, No. 1 Bit, 3 1/4" Blade	62
TMU-8	Universal Joint	18	E-706	6 1/2" Flush Cutting End Nipper	68	SSDP-42	Philips Screwdriver, No. 2 Bit, 4" Blade	63
108-TMU	Set—eight Hex Flexsockets	19	DS-88	1/8" Open End Wrench	58	TMRX-8	1/4" Hex Flare Nut Adaptor	19
108-STMD	Set—eight Deep Hex Sockets	19	DS-1010	5/8" Open End Wrench	58	TMRX-10	1/8" Hex Flare Nut Adaptor	19
112-TM	Set—twelve Hex Sockets	19	DS-1212	3/16" Open End Wrench	58	TMRX-12	3/8" Hex Flare Nut Adaptor	19
86C	6 1/2" Diagonal Cutter Plier	70	GA-12N	Screw Starter	65	TRX-810	1/4" x 3/16" Flare Nut Wrench	54
94	4 1/2" Needle Nose Plier	71	GA-233	Screw Starter	65	XID-605	Set—5 Midget Boxsockets	53
105	5" Gripping Plier, adj. slip-joint	69						

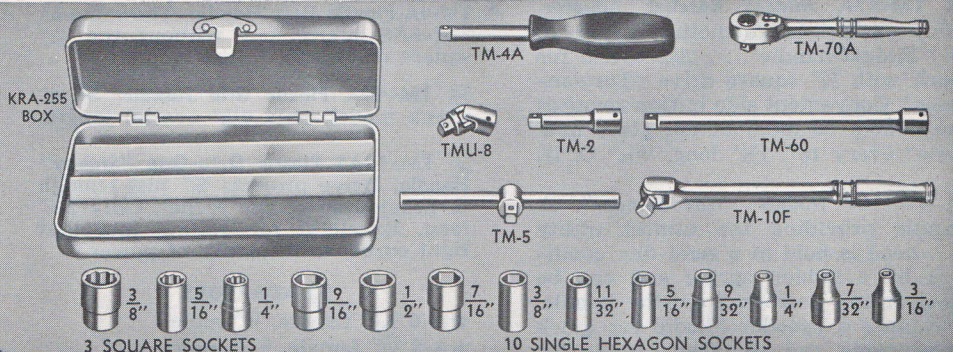


113-TM-B MIDGET BASIC SET

113-TM-B Midget Basic Set. Gives you the most basic sockets and popular Nut Spinner handle in the 1/4" square drive series, in KRA-222A Box. (6 7/16" x 2 3/8" x 1 3/16".)

113-TM Set. Above set tools only.

Stock No.	Description	See Page
TM-10F	Nut Spinner Handle	18
TM-6	3/16" Single Hex Socket	19
TM-7	1/8" Single Hex Socket	19
TM-8	1/4" Single Hex Socket	19
TM-9	5/16" Single Hex Socket	19
TM-10	3/8" Single Hex Socket	19
TM-11	1/2" Single Hex Socket	19
TM-12	5/8" Single Hex Socket	19
TM-14	1 1/8" Single Hex Socket	19
TM-16	1 1/2" Single Hex Socket	19
TM-408	1 1/4" Double Square Socket	19
TM-410	5/16" Double Square Socket	19
TM-412	3/8" Double Square Socket	19



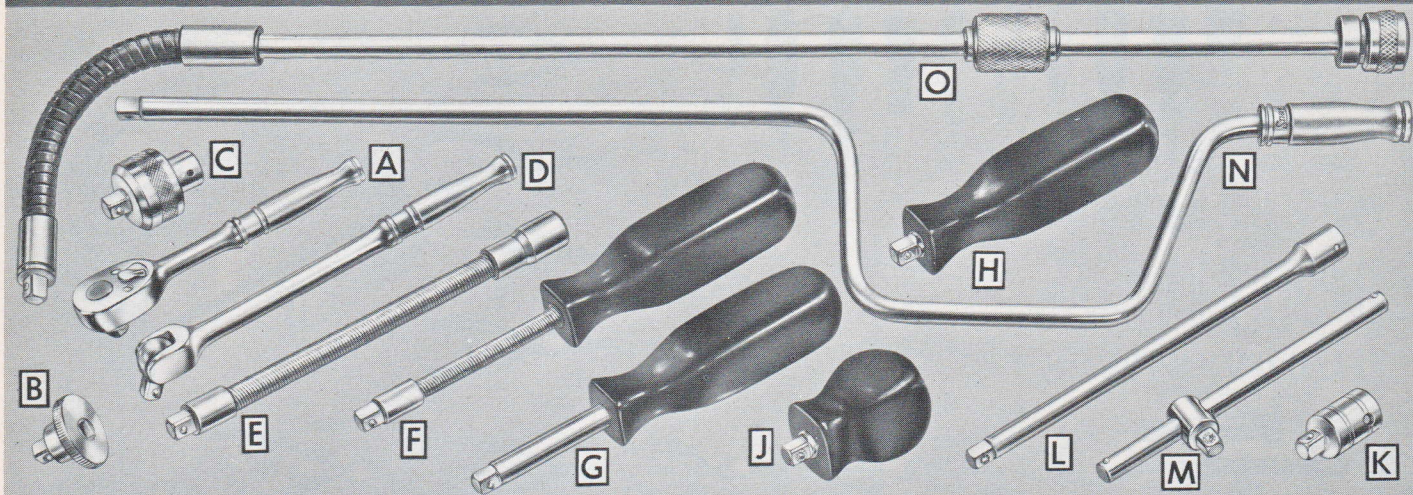
120-TM-B MIDGET STANDARD SET—20 Tools, 1/4" Sq. Drive

120-TM-B Midget Standard Set. Contains the twenty most needed wrenches and handles in our popular Midget Series. (1/4" square drive.) This is a very fine set for workers on production lines assembling miniature instruments or machines, and for service mechanics in any line of business where small nuts or bolts have to be turned. The hexagon sockets range from 3/16" to 9/16". Complete in KRA-255 red enameled metal box (6 13/32" x 4 3/16" x 1").

120-TM Set. Above set of tools without the box.

Stock No.	Description	See Page	Stock No.	Description	See Page
TM-2	2" Extension Bar	18	TM-9	5/32" Single Hex Socket	19
TM-5	Sliding Bar Handle	18	TM-10	1/16" Single Hex Socket	19
TM-4A	Plastic-Grip Handle	18	TM-11	1/32" Single Hex Socket	19
TM-10F	Nut Spinner Handle	18	TM-12	3/8" Single Hex Socket	19
TM-60	6" Extension Bar	18	TM-14	1/16" Single Hex Socket	19
TM-70A	Ratchet Wrench	18	TM-16	1/2" Single Hex Socket	19
TMU-8	Universal Joint	18	TM-18	5/16" Single Hex Socket	19
TM-6	3/16" Single Hex Socket	19	TM-408	1 1/4" Double Square Socket	19
TM-7	1/8" Single Hex Socket	19	TM-410	5/16" Double Square Socket	19
TM-8	1/4" Single Hex Socket	19	TM-412	3/8" Double Square Socket	19

Snap-on MIDGET SOCKET WRENCHES



Snap-on MIDGET HANDLES AND ATTACHMENTS (1/4" Square Drive)

▲ **A** **TM-70A Midget Ratchet Wrench.** The finest ratchet ever made in such a small size . . . It reverses by shifting the thumb lever . . . 20 tooth gear allows working in only an 18° arc . . . useful in close places where handle swing is limited. Overall length is only 4 7/16", head thickness is 3/8".

B **TMS-70 Ratchet Spinner.** Speeds up work since it allows the socket or attachment to be turned with the fingers without the need of moving the ratchet handle. Fits in between the ratchet and the socket so nuts may be spun fast by hand. Milled edge provides good grip.

FTL-703 Ratchet Spinner Set, one each for 1/4", 3/8", 1/2" square drive Ratchets.

▲ **C** **TM-67A Midget Ratchet Adaptor.** Adds reversible ratcheting speed to any Midget handle . . . also useful for work with 1/4" square drive "Torquometers." Convenient side button reverses the action. 20-tooth action gives new "bite" every 18°. 1 3/8" long, 1 5/16" O. D.

▲ **D** **TM-10F Midget "Nut Spinner".** A handle providing the utmost utility . . . head is held in a semi-flex condition by a hidden spring and can be used at any position from the handle. Combines a speeder handle for quick nut-turning and an offset handle for bringing them up tight. Overall length of this tool is 6".

▲ **E** **★TM-61 Midget "Flexextension".** Made of best 5/16" diameter flexible cable, this addition to your Midget line of tools will help you reach awkward, hard-to-get-at nuts where a solid handle or extension bar cannot possibly be used. Not intended for breaking loose tight nuts, etc. Length 6".

▲ **F** **★TM-62A Flexible Driver.** Has the comfortable, powerful "Octo-Grip" handle. For use on hard-to-reach jobs. Will take all 1/4" Midget attachments. The flexible steel cable is firmly anchored to handle. 6 3/4" long. Not designed for final tightening.

▲ **G** **TM-4AS Plastic Grip Handle.** Has a 1/4" drive end inserted in handle so it can be used as an extension bar. Overall length 5 3/4", shank 2" long.

▲ **TM-4A Plastic Grip Handle.** The same as TM-4AS above but without the 1/4" square drive hole in the handle.

H **TM-40A Plastic Grip Handle.** Short shank model, only 4 1/8" overall length.

J **TM-40AS Plastic Octo-Grip "Stubby" Handle.** Drive projects 3/8" just enough to provide space for socket. Only 2 1/8" long. Excellent for getting into that tight corner with plenty of power.

K ADAPTORS

★A-6 3/32" female, 1/4" male.

★A-8 1/4" female, 3/32" male.

▲ **★TM-1** 3/8" female, 1/4" male.

▲ **★TA-3** 1/4" female, 3/8" male.

L **Midget Extension Bars.** Lengthen the reach and increase the adaptability of Midget handles. Four popular sizes. Provide just the right length for every job.

▲ **TM-2** Extension Bar..2" overall length.

TMX-4 Extension Bar..4" overall length.

▲ **TM-60** Extension Bar..6" overall length.

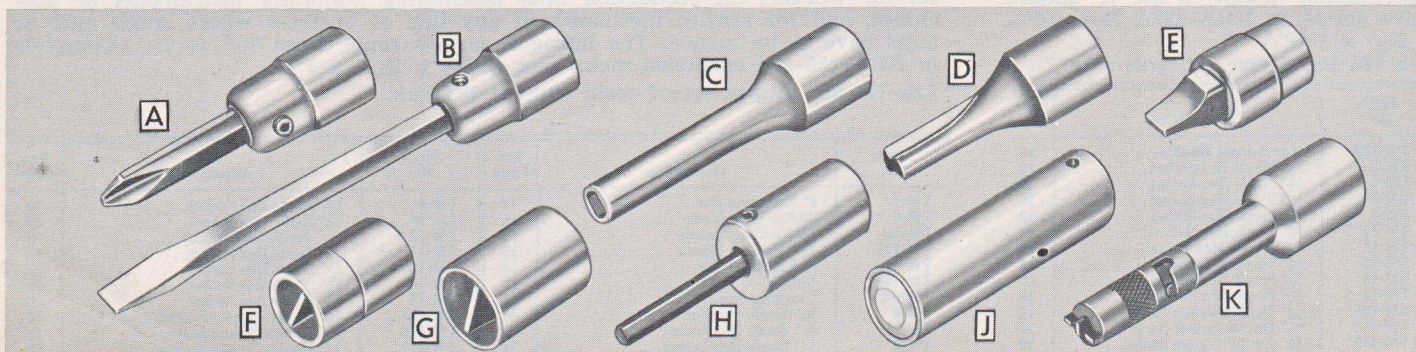
TM-140 Extension Bar 14" overall length.

▲ **M** **TM-5 Midget Sliding Bar.** Combines a tee handle with an offset handle. Sliding head can be used at any position on handle and can be slid back and forth to provide turning room without removing tool from job. Handle length is 4 1/2", head depth is 1 3/16", 1/4" drive.

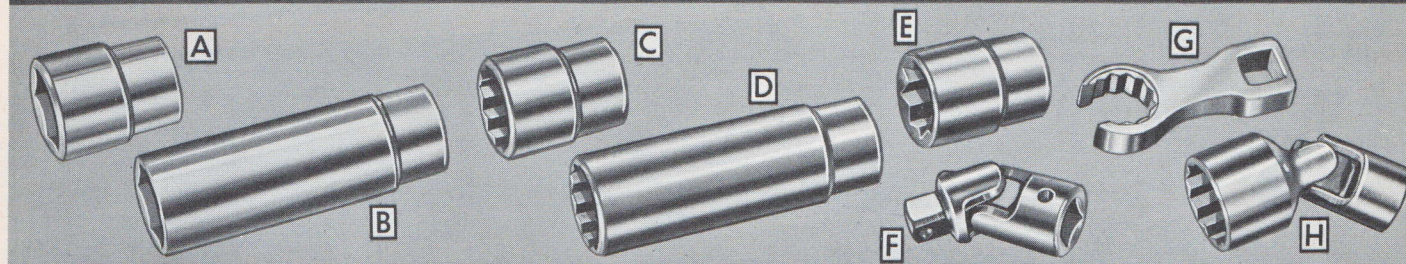
▲ **N** **TMS-4A Midget Speeder.** Time saver anywhere that long reach is needed for breaking loose or firmly setting small nuts or bolts. Spins them off in a hurry. Handle turns freely for easy operation. 17 1/2" long, shank length is 9 7/16", radius of handle sweep is 3 5/16".

O **★TM-65 Flexible Adjusting Wrench.** Handy for adjusting four barrel or dual carburetors. 19 3/4" long, clears obstructions such as air cleaners, etc. Thin, gets into close quarters. Has 1/4" square drive. Knurled knob and drive are connected by a shaft and dual wound wires. Turning knob thus turns drive. Etched mark on knob permits counting of turns made.

These Additional Attachments are Listed on Opposite Page



AND SETS WITH 1/4" SQUARE DRIVE



Snap-on MIDGET SOCKETS AND ATTACHMENTS (1/4" Square Drive)

▲ SINGLE HEX SOCKETS

A Thin, straight walls reach into the tightest working spaces. Precisely machined.

Wrench Size	Stock No.	Clears Bolt	Max. O. D.	L'gth
1/8"	TM-04	1/2"	7/16"	7/8"
5/32"	TM-05	1/2"	7/16"	7/8"
3/16"	TM-6	17/32"	7/16"	7/8"
7/32"	TM-7	17/32"	7/16"	7/8"
1/2"	TM-8	17/32"	7/16"	7/8"
9/32"	TM-9	17/32"	7/16"	7/8"
5/16"	TM-10	17/32"	7/16"	7/8"
11/32"	TM-11	17/32"	7/16"	7/8"
3/8"	TM-12	17/32"	7/16"	7/8"
7/16"	TM-14	17/32"	5/8"	7/8"
1/2"	TM-16	17/32"	11/16"	7/8"
9/16"	TM-18	17/32"	25/32"	7/8"

112-TM Set. Above 12 single hex sockets.

DOUBLE SQUARE SOCKETS

E Double broaching gives new grip with only 45° turn.

Wrench Size	Stock No.	Clears Bolt	Max. O. D.	L'gth
1/4"	TM-408	17/32"	15/32"	7/8"
5/16"	TM-410	17/32"	9/16"	7/8"
3/8"	TM-412	17/32"	21/32"	7/8"

103-TM Set. Above 3 sockets.

▲ DEEP SINGLE HEX SOCKETS

B Thin straight walls reach down over protruding bolts.

Wrench Size	Stock No.	Clears Bolt	Max. O. D.	L'gth
1/8"	STM-04	121/32"	7/16"	2"
5/32"	STM-05	121/32"	7/16"	2"
3/16"	STM-6	121/32"	7/16"	2"
7/32"	STM-7	121/32"	7/16"	17/8"
1/4"	STM-8	121/32"	7/16"	2"
9/32"	STM-9	121/32"	7/16"	2"
5/16"	STM-10	121/32"	7/16"	2"
11/32"	STM-11	121/32"	1/2"	2"
3/8"	STM-12	121/32"	9/16"	2"
7/16"	STM-14	121/32"	5/8"	2"
1/2"	STM-16	121/32"	11/16"	2"
9/16"	STM-18	121/32"	25/32"	2"

112-STM-T Set. Above 12 sockets in KTA-246A metal tray.

112-STM Set. Above set but without tray.

F TMU-8 Universal Joint. One of the biggest time savers you can own . . . works around obstructions to do a fast efficient job. Overall length is 115/64", 1/2" O.D., 1/4" square drive.

▲ DOUBLE HEX SOCKETS

C Thin, straight walls get in close quarters. Hot broached, precisely machined.

Wrench Size	Stock No.	Clears Bolt	Max. O. D.	L'gth
3/16"	TMD-6	17/32"	7/16"	7/8"
1/4"	TMD-8	17/32"	7/16"	7/8"
9/32"	TMD-9	17/32"	7/16"	7/8"
5/16"	TMD-10	17/32"	7/16"	7/8"
11/32"	TMD-11	17/32"	7/16"	7/8"
3/8"	TMD-12	17/32"	17/32"	1/4"
7/16"	TMD-14	17/32"	5/8"	7/8"
1/2"	TMD-16	17/32"	11/16"	7/8"

108-TMD Set. Above 8 sockets.

G DOUBLE HEX CROWFOOT WRENCHES

Designed for servicing 12 point nuts and bolts on small jet engines. Use with any 1/4" square drive handle or "Torq-meter". They add 1" to distance between hand and nut when used with the "Torq-meter". Only 1/4" thick.

Wrench Size	Stock No.	Center to Center	Length
1/4"	TMRX-8	1"	1 5/16"
5/16"	TMRX-10	1"	1 3/8"
3/8"	TMRX-12	1"	1 7/16"

▲ DEEP DOUBLE HEX SOCKETS

D Reach down over protruding bolts . . . double hex broaching aids in turning nuts where wrench handle movement is very limited.

Wr. Size	Stock No.	Clears Bolt	Max. O. D.	L'gth
3/16"	STMD-6	121/32"	7/16"	2"
1/4"	STMD-7	121/32"	7/16"	17/8"
5/16"	STMD-8	121/32"	7/16"	2"
3/8"	STMD-9	121/32"	7/16"	2"
7/16"	STMD-10	121/32"	7/16"	2"
1/2"	STMD-12	121/32"	9/16"	2"
5/8"	STMD-14	121/32"	5/8"	2"
3/4"	STMD-16	121/32"	11/16"	2"

108-STMD Set. Above 8 deep double hex sockets.

DOUBLE HEX FLEXOCKETS

G Short coupled, work in wide angle, in tight places.

Wr. Size	Stock No.	Clears Bolt	Max. O. D.	L'gth
3/16"	TMU-61	5/16"	5/16"	1 1/4"
1/4"	TMU-81	5/16"	15/32"	1 1/4"
5/16"	TMU-101	11/32"	15/32"	1 1/4"
3/8"	TMU-111	11/32"	15/32"	1 1/4"
7/16"	TMU-121	11/32"	17/32"	1 1/4"
1/2"	TMU-141	11/32"	17/32"	1 1/4"
5/8"	TMU-161	15/32"	43/64"	1 3/4"
3/4"	TMU-181	15/32"	49/64"	1 3/4"

108-TMU Set, above 8 double hex Flexockets.

See the Opposite Page for Pictures of these Attachments

B Midget Phillips Screw Drivers.

★**TMP-12A** No. 1 Bit Driver. 127/32" long.

★**TMP-12A-2** Extra No. 1 Bit, 15/16" long.

★**TMP-22A** No. 2 Bit Driver. 127/32" long.

★**FP-22A-2** Extra No. 2 Bit, 15/16" long.

★**TMP-23A** No. 2 Bit Driver. 3" long.

★**TMP-23A-2** Extra No. 2 Bit, 2 1/2" long.

ESD-303 Roll-Pin for above.

C Standard Screw Drivers. Slender, long screw drivers with standard tip. Save time on many jobs where regular drivers would be awkward to use or where extra turning leverage is needed to break screws loose. Each is 3 1/4" long.

★**TMC-104A** Screw Driver. 3/16"x.032" tip.

★**TMC-104A-2** Extra Bit.

ESD-319 Roll-Pin for TMC-104A.

★**TMC-105A** Screw Driver. 1/4"x.032" tip.

★**TMC-105A-2** Extra Bit.

★**TMC-106A** Screw Driver. 3/8"x.042" tip.

★**TMC-106A-2** Extra Bit.

ESD-303 Roll-Pin for TMC-105A and -106A.

D TM-22A Windshield Wiper Sockets.

This special socket has an oval opening designed to fit oval-head screws used on many windshield wipers. Opening is 1/8" x 3/16" oval, 1/8" long.

A Midget Clutch-type Screw Drivers.

Built short for close-quarter work, these drivers provide the best method of turning clutch-type screws, sometimes called "butterfly" or "figure-8" screws. 1/4" square drive, 1 3/8" long.

★**TM-27** Screw Driver. 11/64" bit diameter

★**TM-30** Screw Driver. 15/64" bit diameter

★**TM-31** Screw Driver. 5/32" bit diameter

E TM-82 Short Screw Driver. Can often be used to great advantage where working space is limited. Blade tip is 1/4"x.032" and is replaceable. 7/8" long.

★**TM-82-2** Screw Driver Bit only.

ESD-315 Roll-Pin only.

Screw Driver Attachments. Used with TM-65 wrench or other 1/4" drive handles. Blade is recessed in outer wall of socket to self-center. Made for carburetor work but have many other uses.

A ★**TM-83A** 1/32" x 3/8" blade.

B ★**TM-84** 1/32" x 7/16" blade.

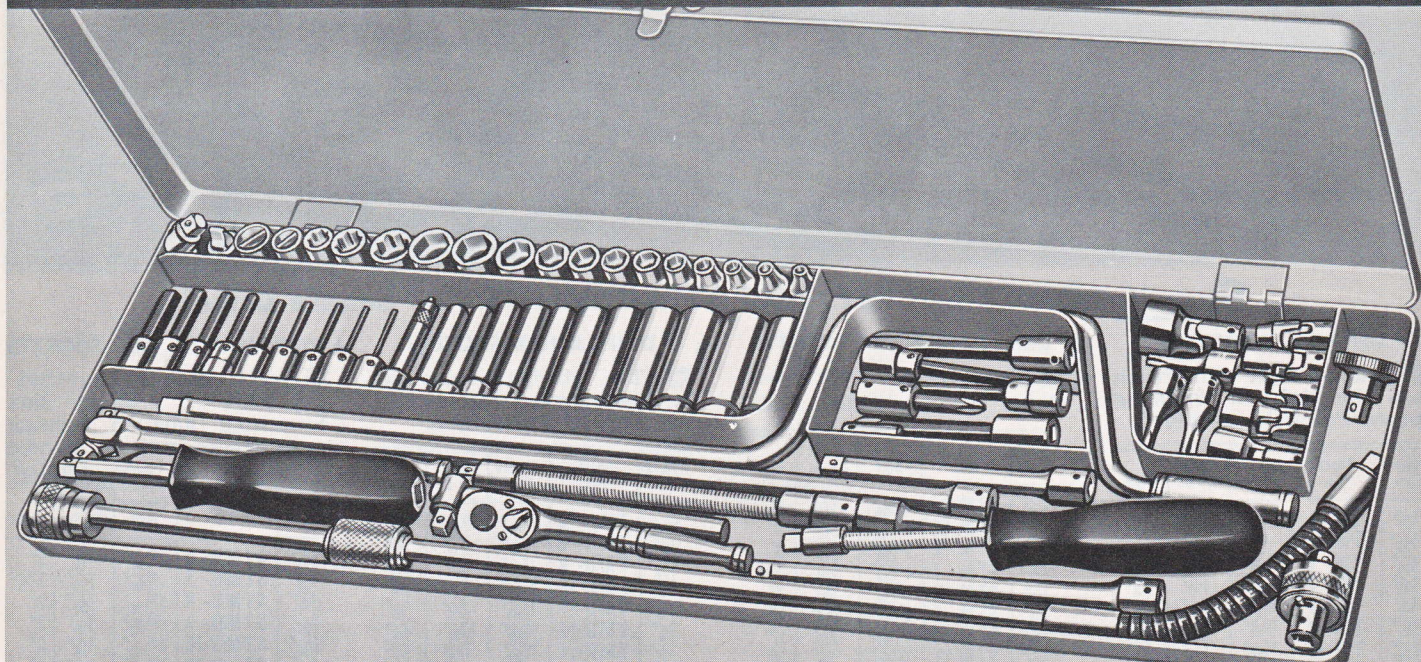
H Hex Head Cap Screw Drivers especially useful in electronic, missile assembly work, etc., where small hex head cap screws are used.

Complete Tool		Hex Bit Only	Screws or Roll Pin
Stock No.	Hex Size		
★ TMA-2	1/16"	★ TMA-2-2	ME3F11
★ TMA-2 1/2	5/64"	★ TMA-2.5-2	ME3F11
★ TMA-3	3/32"	★ TMA-3-2	ME3F11
★ TMA-3 1/2	7/64"	★ TMA-3.5-2	ME3F11
★ TMA-4	1/8"	★ TMA-4-2	ME3F11
★ TMA-4 1/2	9/64"	★ TMA-4.5-2	ME3F11
★ TMA-5	5/32"	★ FA-5A-2	ESD-319
★ TMA-6	3/16"	★ FA-6A-2	ESD-303
★ TMA-7	1/32"	★ FA-7A-2	ESD-303
★ TMA-8	1/4"	★ FA-8A-2	ESD-303

F GA-137 Magnet Holder Adaptor. Converts the TM-65 or other 1/4" drive handle into a handy magnetic pick-up tool, makes it easy to retrieve metal parts from awkward places.

G GA-138 Screw Starter Adaptor. Same head as screw starters shown on page 65. The GA-138 plus the TM-65 flexible wrench handle will be very useful on many screw starting applications.

169-TM-B COMPLETE MIDGET SET—1/4" SQ. DRIVE



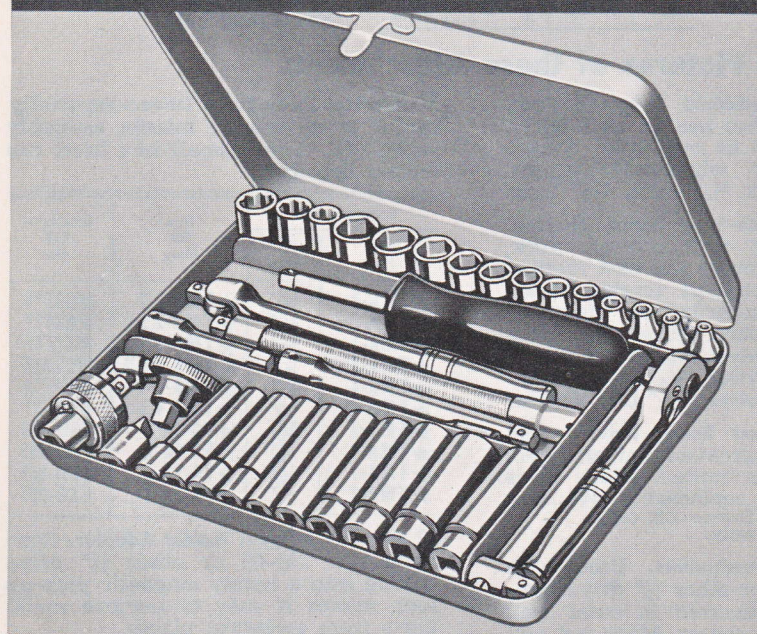
169-TM-B Complete Midget Set, 69 tools in KRA-282 Metal Box. (19 1/4" x 5 5/8" x 1 1/4").

169-TM Set. Above Set without Box.

Select the High Quality **Snap-on** Set You need for YOUR Work

Here are real utility sets of Midget wrenches for garage and service station, aircraft instrument, electric and electronic component assembly and service and all other businesses where tiny socket wrenches are needed for product assembly or maintenance. Each unit is proportioned and built to high standards of SNAP-ON tool design and quality. Wrench openings are precision machined to insure accurate fitting to tiny nuts and bolts, scientifically heat treated to give long wear. Chrome plated. Set at top of page has 69 tools, the one at the bottom has 37. Both sets housed in special die-formed metal boxes with baked-on red enamel finish.

137-TM-B MIDGET UTILITY SET



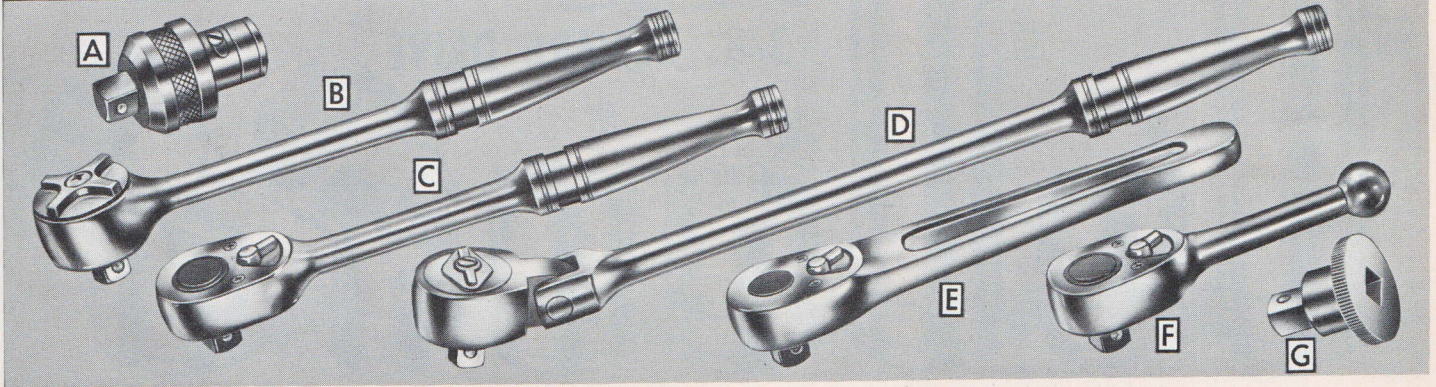
37 Small Tools For Work On Tiny Jobs

137-TM-B Midget Utility Set in KRA-275 Metal Box (8 3/16" x 5 11/16" x 1").

137-TM Midget Set. Above Set without Box.

Stock No.	Description	135-TM Set	169-TM Set
TM-70A	Ratchet Wrench	X	X
TM-67A	Ratchet Adaptor	X	X
TMS-70	Ratchet Spinner	X	X
TM-5	Sliding Bar	X	X
TM-10F	Nut Spinner	X	X
TMS-4A	Speeder Handle		X
TM-4AS	Plastic Grip Handle	X	X
TMU-8	Universal Joint	X	X
TM-2	2" Extension	X	X
TMX-4	4" Extension	X	X
TM-60	6" Extension	X	X
TM-140	14" Extension		X
TM-62A	Flexible Handle		X
TM-61	6" Flexextension	X	X
TM-65	Flexible Adjuster Handle		X
TM-04	1/4" Single Hex Socket	X	X
TM-05	5/16" Single Hex Socket	X	X
TM-6	3/8" Single Hex Socket	X	X
TM-7	7/16" Single Hex Socket	X	X
TM-8	1/2" Single Hex Socket	X	X
TM-9	9/16" Single Hex Socket	X	X
TM-10	5/8" Single Hex Socket	X	X
TM-11	11/16" Single Hex Socket	X	X
TM-12	3/4" Single Hex Socket	X	X
TM-14	7/8" Single Hex Socket	X	X
TM-16	1/2" Single Hex Socket	X	X
TM-18	9/16" Single Hex Socket	X	X
STM-6	Deep Hex Socket	X	X
STM-7	Deep Hex Socket	X	X
STM-8	Deep Hex Socket	X	X
STM-9	Deep Hex Socket	X	X
STM-10	Deep Hex Socket	X	X
STM-11	Deep Hex Socket	X	X
STM-12	Deep Hex Socket	X	X
STM-14	Deep Hex Socket	X	X
STM-16	Deep Hex Socket	X	X
STM-18	Deep Hex Socket	X	X
TMU-81	Flexsocket		X
TMU-101	Flexsocket		X
TMU-121	Flexsocket		X
TMU-141	Flexsocket		X
TMU-161	Flexsocket		X
TMU-181	Flexsocket		X
TM-408	Double Sq. Socket	X	X
TM-410	Double Sq. Socket	X	X
TM-412	Double Sq. Socket	X	X
TM-82	Tip Short Screw Driver	X	X
TMC-104A	Tip Screw Driver		X
TMC-105A	Tip Screw Driver		X
TMC-106A	Tip Screw Driver		X
TMP-12A	No. 1 Phillips Screw Driver		X
TMP-22A	No. 2 Phillips Screw Driver		X
TMP-23A	No. 2 Phillips Screw Driver (Long)		X
TM-27	Clutch Screw Driver		X
TM-30	Clutch Screw Driver		X
TM-31	Clutch Screw Driver		X
TMA-2 1/2	Hex Head Screw Driver		X
TMA-3	Hex Head Screw Driver		X
TMA-3 1/2	Hex Head Screw Driver		X
TMA-4	Hex Head Screw Driver		X
TMA-4 1/2	Hex Head Screw Driver		X
TMA-5	Hex Head Screw Driver		X
TMA-6	Hex Head Screw Driver		X
TMA-7	Hex Head Screw Driver		X
TMA-8	Hex Head Screw Driver		X
TM-84	1/2" x 3/16" Screw Driver Blade		X
TM-83A	1/2" x 3/8" Screw Driver Blade		X
GA-137	Magnetic Holder Adaptor		X
GA-138	Screw Starter Adaptor		X

Snap-on[®] FERRET HANDLES — 3/8" SQUARE DRIVE



You Get All These
Superior Features In

Snap-on

"FERRET" WRENCHES

- Easy to hold palm-grips on handles
- Choice of seven different types of ratchets and ratchet adaptor
- Long slim handles for close-in work
- Handle drives have strong spring and friction ball for positive socket grip
- Wide range of socket types and sizes
- 4-way socket grip for faster hook-ups
- Chip-curved hot broached socket walls
- Large variety of special attachments
- High grade alloy steel for strength
- Controlled hardening for long wear

"FERRET" RATCHET WRENCHES . . . Built to give years of trouble-free service. Hardened bearings, special alloy steels, controlled heat treatment and precision machining of all parts, insure a free working ratcheting action. The heads and comfortable "Palm-Grip" handles have a heavy chrome plate finish.

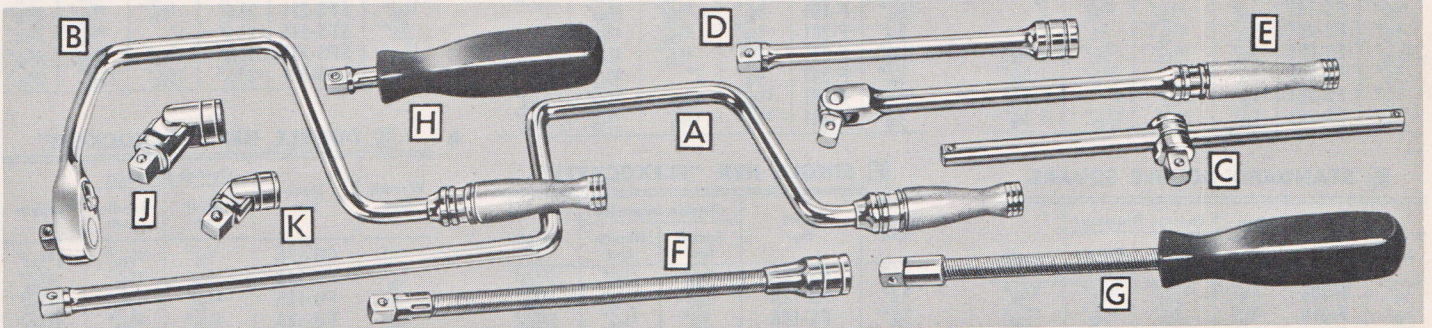
- ▲ **A** F-67B "Ferret" Ratchet Adaptor. Converts any "Ferret" handle into a reverse action ratcheting tool, provides speed where you cannot use standard type ratchet wrench. Adds versatility to your 3/8" square drive Torquometers. 1 3/4" O. D. 2" long.
- **B** F-671 Ferret Round-Head Ratchet. Very compact head will prove useful for close work. Reversible 20-tooth action needs only 18° handle movement. Ratchet gear drive has black finish. Head, including lever, is 7/8" deep and 1 1/16" diameter. 7 7/8" long.
- ▲ **C** F-71D "Ferret" Ratchet. 30 tooth action allows a new bite every 12° of handle movement. Pawl engages 2 teeth for extra strength. Tool is heavily chrome plated . . . ratchet gear has gun metal finish. Head diameter is 1 1/8", head depth 9/16", 7 1/4" long. A quality tool for men who want the best.
- ▲ **C** F-710B "Ferret" Ratchet. 20 tooth action. 18° handle movement gives a new bite. Tool is heavily chrome plated . . . ratchet gear has gun metal finish. Head diameter is 1 1/8", head depth 9/16", 7 1/4" long. A very popular tool with professional mechanics.

■ **D** F-670A Ferret Flex Ratchet. Saves time on jobs close to obstructions, excellent for spark plug work. The 20-tooth ratchet action is reversible and the flexible head has spring to hold it at desired angle for placement on the job. Length is 10 3/4". Head is 7/8" deep and 1 1/16" diam.

■ **E** F-71M Ferret Flat Handle Ratchet. A fine quality tool at low cost. For many years this type of ratchet handle has been a favorite of many tool users. It has the same smooth working reversible 20-tooth action as other ratchets in the line. The gear drive and bottom head plate have black finish. Head diam. is 1 1/8", depth 9/16". 6 1/8" long.

■ **F** F-710K Ferret Short Ratchet. For use in very restricted access areas. Reversible 20-tooth action gives a new bite with only 18° handle movement. Overall length is only 4". Ball end helps prevent hand slipping. Gear drive has black finish. Head diameter is 1 1/8" and depth 9/16".

■ **G** FRS-70 Ratchet Spinner. Fits in between ratchet and socket so nuts may be spun fast by hand without need of moving ratchet handle. Milled edge provides good grip.



"FERRET" HANDLES COMBINE STRENGTH, SLIMNESS AND BEAUTY—3/8" Sq. DRIVE

■ **A** "Ferret" Speeders. It is impossible to beat a speeder type of wrench handle for fast nut running . . . spins them on or off, fast, with two hand operation. "Palm-Grip" handle rotates to provide easy operation. Three models offer the right length shank for your needs. Radius of the sweep is 3 1/4".

F-4L Speeder. . . 17 1/2" long. 8 1/2" Shank.
F-4M Speeder. . . 24 1/2" long. 15" Shank.
F-4N Speeder. . . 36 1/2" long. 27" Shank.

■ **B** RS-4LB Ratcheting Speeder. Combines the nut turning speed of a speeder where there is plenty of working space with the convenience of ratcheting action for spots where obstructions prevent much handle movement. Smooth working 20 tooth action . . . 18° handle movement gives a new "bite". Chrome plated except for the gun-metal head plate and gear. Radius sweep is 3 1/4", tool is 10 1/4" long.

▲ **C** F-5L "Ferret" Sliding Bar. Head slides to any position . . . a friction ball contacts groove in the handle to center the tool as a Tee handle. Handle length 8", diameter 1 3/32", head depth 1 1/16".

▲ **D** "Ferret" Extension Bars. The advantage of having just the right length extension bar often means getting the job done quicker and with less effort.

FX-1	Extension Bar	1 1/2" Long.
FX-2	Extension Bar	3" Long.
FX-4	Extension Bar	4" Long.
FX-6	Extension Bar	6" Long.
FX-8	Extension Bar	8" Long.
FX-11	Extension Bar	12" Long.
FX-24	Extension Bar	23 1/4" Long.

▲ **E** F10LB "Ferret" "Nut Spinner." Plenty of leverage for pulling nuts up tight or for breaking them loose . . . the swivel head is held in a semi-flex condition at any position by means of an inner spring. Length 9 1/2". Head diameter 1 3/16".

■ **F** *FX-61 "Ferret" "Flexextension." Acts as a flexible drive between wrench handle and socket and provides an easy method of turning nuts in awkward positions . . . works around corners and over obstructions. The tool consists of a 3/8" diameter flexible steel cable fitted with square drive socket ends. Length is 8". Not intended for breaking nuts loose or similar tough jobs.

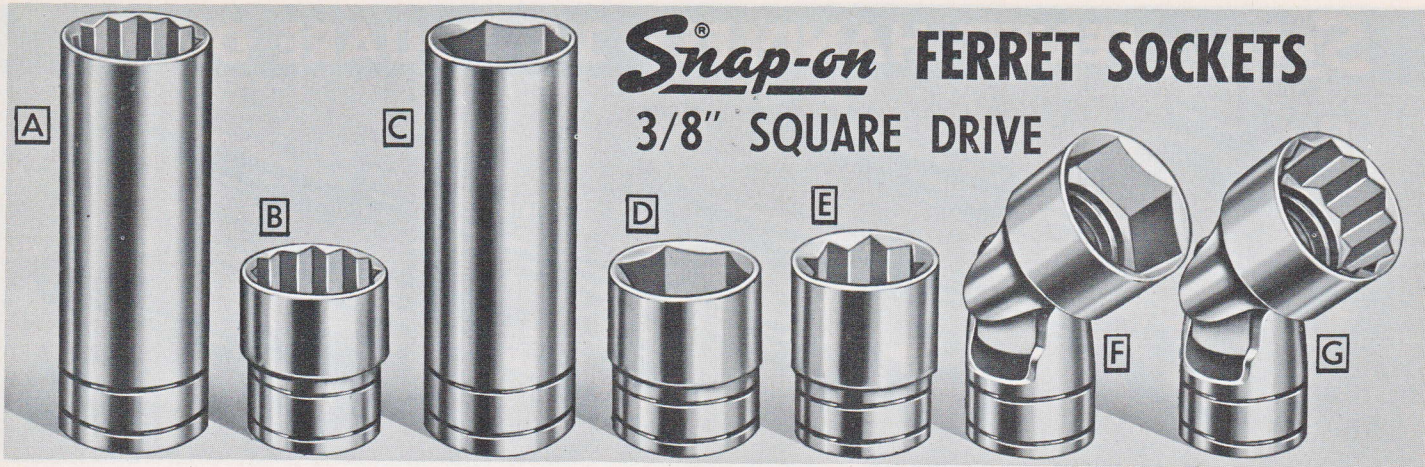
■ **G** ★FX-62A Flexible Driver. Designed for use with 3/8" drive sockets, screw drivers and other attachments on those hard-to-reach jobs. A flexible steel cable allows user to reach around corners or obstructions to service screws or nuts. The square drive end has a spring loaded friction ball which holds attachment in place, other end is firmly anchored in black plastic "Octo-Grip" handle. This Driver is not intended for final tightening or breaking loose stubborn nuts or screws. Overall length is 9 1/8".

■ **H** F-40A "Ferret" Plastic Grip Handle. Make your "Ferret" Set more useful with this shockproof plastic handle. Ideal for electrical work. 5 1/8" long.

Universal Joints. Saves fumbling after those awkward-to-get-at jobs. Tension spring holds tool in a semi-flex state for easy application to the job.

▲ **J** FU-8A Universal Joint. 3/4" outside diameter, length 1 1/16".

▲ **K** FU-80A Universal Joint. 1 1/16" outside diameter, length 1 1/16".



Snap-on[®] FERRET SOCKETS

3/8" SQUARE DRIVE

A DEEP DOUBLE HEX

Wrench Size	Stock No.	Bolt Clearance Depth	Outside Diameter		Length
			Socket End	Handle End	
3/8"	SF-121	11 1/16"	17 3/32"	21 3/32"	21 3/8"
7/16"	SF-141	11 1/16"	5 5/8"	21 3/32"	21 3/8"
1 1/8"	SF-161	11 1/16"	23 3/32"	21 3/32"	21 3/8"
1 1/4"	SF-181	11 1/16"	25 3/32"	11 1/16"	23 3/8"
1 3/8"	SF-191	11 1/16"	13 1/16"	23 3/32"	23 3/8"
1 1/2"	SF-201	11 1/16"	27 3/32"	49 3/64"	23 3/8"
1 5/8"	SF-211	23 1/16"	59 3/64"	27 3/32"	23 3/8"
1 3/4"	SF-241	23 1/16"	1"	29 3/32"	25 3/8"
1 7/8"	SF-261	23 1/16"	1 1/16"	31 3/32"	23 3/4"
2"	SF-281	23 1/16"	1 5/32"	1 1/16"	23 3/4"

"FERRET" LINE PROVIDES A WIDE RANGE OF TYPES AND SIZES

● **Wide Range of Sizes.** All popular sizes are included in each series of "Ferret" sockets and attachments. These sizes, covering a range of 1/4" to 1 1/2", make the SNAP-ON "Ferret" Line a versatile combination of units. When you need sockets it pays to buy the best—from SNAP-ON.

● **Socket Design** with beautiful chrome finish gives these tools a smooth, striking appearance. They are easy to work with, too, for their thin walls enable them to squeeze into the closest places, yet afford the maximum strength necessary to break loose stubborn nuts and bolts. Larger, easy-to-read markings help you spot the size you need.

● **Four Way Socket Grip.** Shallow indentations machined in all four sides of the square drive opening allow faster, more convenient interchanging of units as socket grips securely on any of the four sides.

● **Chip-Curled Broaching.** No rough bottoms inside the socket to collect dirt and grease. The smoothly rounded bottoming is formed during the hot broaching process to give you the finest in socket construction.

● **Chamfered Openings.** The slight-chamfer around the edge of the wrench opening aids in guiding the socket onto the nut.

D STANDARD SINGLE HEX

Wrench Size	Stock No.	Bolt Clearance Depth	Outside Diameter		Length
			Socket End	Handle End	
1/4"	FS-081	7 1/16"	25 5/64"	21 3/32"	29 3/32"
5/16"	FS-101	7 1/16"	29 5/64"	21 3/32"	29 3/32"
3/8"	FS-121	7 1/16"	17 3/32"	21 3/32"	29 3/32"
7/16"	FS-141	7 1/16"	5 5/8"	21 3/32"	29 3/32"
1 1/8"	FS-161	7 1/16"	23 3/32"	21 3/32"	29 3/32"
1 1/4"	FS-181	7 1/16"	25 3/32"	11 1/16"	15 1/16"
1 3/8"	FS-191	7 1/16"	13 1/16"	23 3/32"	1"
1 1/2"	FS-201	7 1/16"	27 3/32"	49 3/64"	1"
1 5/8"	FS-211	7 1/16"	59 3/64"	27 3/32"	1 1/16"
1 3/4"	FS-241	7 1/16"	1"	29 3/32"	1 1/8"
1 7/8"	FS-261	7 1/16"	1 1/16"	31 3/32"	1 1/8"
2"	FS-281	7 1/16"	1 5/32"	1 1/16"	1 1/8"

B STANDARD DOUBLE HEX

Wrench Size	Stock No.	Bolt Clearance Depth	Outside Diameter		Length
			Socket End	Handle End	
1/4"	F-081	7 1/16"	25 5/64"	21 3/32"	29 3/32"
5/16"	F-101	7 1/16"	29 5/64"	21 3/32"	29 3/32"
3/8"	F-121	7 1/16"	17 3/32"	21 3/32"	29 3/32"
7/16"	F-141	7 1/16"	5 5/8"	21 3/32"	29 3/32"
1 1/8"	F-161	7 1/16"	23 3/32"	21 3/32"	29 3/32"
1 1/4"	F-181	7 1/16"	25 3/32"	11 1/16"	15 1/16"
1 3/8"	F-191	7 1/16"	13 1/16"	23 3/32"	1"
1 1/2"	F-201	7 1/16"	27 3/32"	49 3/64"	1"
1 5/8"	F-211	7 1/16"	59 3/64"	27 3/32"	1 1/16"
1 3/4"	F-241	7 1/16"	1"	29 3/32"	1 1/8"
1 7/8"	F-261	7 1/16"	1 1/16"	31 3/32"	1 1/8"
2"	F-281	7 1/16"	1 5/32"	1 1/16"	1 1/8"

C DEEP SINGLE HEX

Wrench Size	Stock No.	Bolt Clearance Depth	Outside Diameter		Length
			Socket End	Handle End	
3/8"	SFS-121	15 1/16"	17 3/32"	21 3/32"	21 3/8"
7/16"	SFS-141	15 1/16"	5 5/8"	21 3/32"	21 3/8"
1 1/8"	SFS-161	15 1/16"	23 3/32"	21 3/32"	21 3/8"
1 1/4"	SFS-181	15 1/16"	25 3/32"	11 1/16"	23 3/8"
1 3/8"	SFS-191	15 1/16"	13 1/16"	23 3/32"	23 3/8"
1 1/2"	SFS-201	15 1/16"	27 3/32"	49 3/64"	23 3/8"
1 5/8"	SFS-211	15 1/16"	59 3/64"	27 3/32"	23 3/8"
1 3/4"	SFS-241	15 1/16"	1"	29 3/32"	25 3/8"
1 7/8"	SFS-261S	15 1/16"	1 1/16"	31 3/32"	23 3/4"
2"	SFS-281	15 1/16"	1 5/32"	1 1/16"	23 3/4"

E STANDARD DOUBLE SQUARE

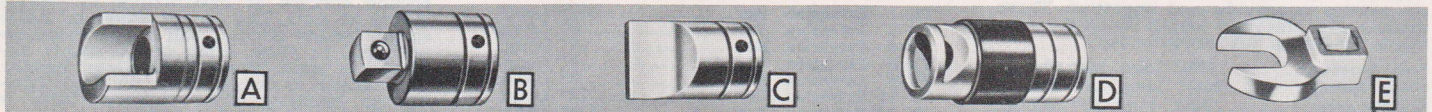
Wrench Size	Stock No.	Bolt Clearance Depth	Outside Diameter		Length
			Socket End	Handle End	
1/4"	F-308	3 3/8"	31 5/16"	21 3/32"	27 3/32"
5/16"	F-310	3 3/8"	9 1/16"	21 3/32"	27 3/32"
3/8"	F-312	15 3/32"	21 3/32"	11 1/16"	15 1/16"
7/16"	F-314	17 3/32"	25 3/32"	11 1/16"	1"
1 1/8"	F-316	17 3/32"	7 7/8"	25 3/32"	1"
1 1/4"	F-318	19 3/32"	1"	29 3/32"	1 1/8"
1 1/2"	F-320	19 3/32"	1 1/16"	31 3/32"	1 1/8"

F SINGLE HEX "FLEXOCKETS"

Wrench Size	Stock No.	Outside Diameter		Length
		Socket End	Handle End	
5/16"	FS-10A	15 3/32"	11 1/16"	137 3/64"
3/8"	FS-12A	17 3/32"	11 1/16"	137 3/64"
7/16"	FS-14A	5 5/8"	11 1/16"	137 3/64"
1 1/8"	FS-16A	23 3/32"	11 1/16"	137 3/64"
1 1/4"	FS-18A	25 3/32"	11 1/16"	111 1/16"
1 3/8"	FS-20A	7 7/8"	11 1/16"	1 3/4"
1 1/2"	FS-22	31 3/32"	3/4"	1 1/2"
1 3/4"	FS-24	1"	3/4"	1 1/2"

G DOUBLE HEX "FLEXOCKETS"

Wrench Size	Stock No.	Outside Diameter		Length
		Socket End	Handle End	
3/8"	FU-12A	9 1/16"	11 1/16"	137 3/64"
7/16"	FU-14A	5 5/8"	11 1/16"	137 3/64"
1 1/8"	FU-16A	23 3/32"	11 1/16"	121 3/32"
1 1/4"	FU-18A	25 3/32"	11 1/16"	111 1/16"
1 3/8"	FU-20A	7 7/8"	11 1/16"	1 3/4"
1 1/2"	FU-22A	31 3/32"	3/4"	1 1/2"
1 3/4"	FU-24A	1"	3/4"	1 1/2"
1 7/8"	FU-26A	1 1/8"	3/4"	2"
2"	FU-28A	1 5/8"	3/4"	2"



WEATHERHEAD SOCKETS

A Turn Weatherhead copper fittings without damage. All 1 1/4" long except FD-12 which is 1 3/8".
FD-40 Set. One each of following sockets.
FD-6 Socket. Fits 3/16" size.
FD-8 Socket. Fits 1/4" size.
FD-10 Socket. Fits 5/16" size.
FD-12 Socket. Fits 3/8" size.

HANDLE ADAPTORS

B Enable you to interchange Ferret wrenches with Midget and Master units.
★TM-1 Adaptor. Converts 3/8" sq. drive handles to 1/4".
★TA-3 Adaptor. Converts 1/4" sq. drive handles to 3/8".
★A-2 Adaptor. Converts 3/8" sq. drive handles to 1/2".
★A-4 Adaptor. Converts 1/2" sq. drive handles to 3/4".

DRAG LINK SOCKET

C **F-22A Drag Link Socket.**
 A heavy duty, wide bladed screw driver attachment that will prove ideal for adjusting and tightening slotted nuts on steering gear assemblies, shock absorbers, drag links, etc. Blade is 1 1/16" wide and 7/64" thick. Overall length of tool 1 1/2".

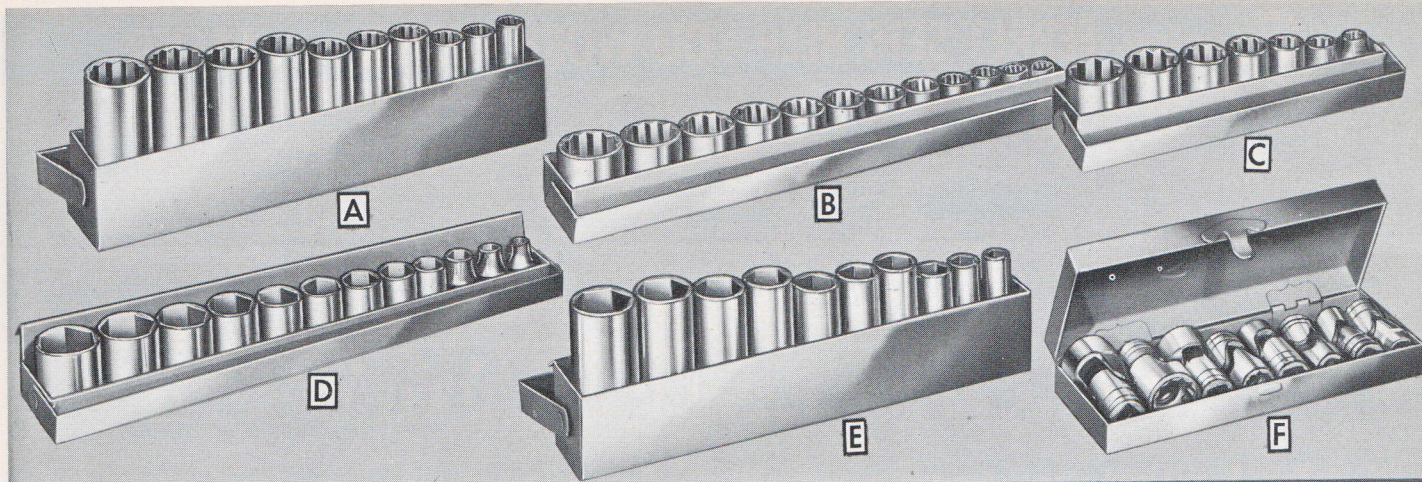
PAN SCREW DRIVER

D **★F-21N Pan Screw Driver.**
 For removing Chevrolet pan screws. A screw driver with spring action collar . . . holds screw for inserting or locates over grease covered screws and prevents blade from slipping out of slot. Grease is forced out of side slots when pressure is applied.

CROWFOOT WRENCHES

E Time saving tools on many jobs where clearance problems prevent use of open end wrenches or sockets.

No.	Size	No.	Size
FCO-12	3/8"	FCO-22	1 1/16"
FCO-14	7/16"	FCO-24	3/4"
FCO-16	1 1/8"	FCO-26	1 3/8"
FCO-18	1 1/4"	FCO-28	1 3/4"
FCO-20	1 1/2"	FCO-40	1 3/4"



BUY YOUR FERRET SOCKETS IN THESE FULL-RANGE SETS

ALL SOCKETS AND ATTACHMENTS ON THIS PAGE ARE 3/8" Sq. Drive

A 210-SF-T Deep Double Hex Socket Set. 10 sockets SF-121 to SF-281, in KTA-231 metal tray. Tray has red enamel finish.

210-SF Set Above set without tray.

KTA-231 Metal Tray

B 212-F-T Double Hex Socket Set. 12 sockets F-081 to F-281, in KTA 232 metal tray.

210-F Set. Above set without tray.

C 207-F-T Square Socket Set. 7 square sockets F-308 to F-320, in KTA-233 metal tray. Tray has red enamel finish.

207-F Set. Above set without tray.

KTA-233 Metal Tray.

D 212-FS-T Standard Single Hex Socket Set. Contains twelve standard single hex sockets FS-081 to FS-281, in KTA-232 metal tray. Red enamel finish on tray.

212-FS Set. Above set without tray.

KTA-232 Metal Tray.

E 210-SFS-T Deep Single Hex Socket Set. Contains ten deep single hex sockets SFS-121 to SFS-281, in KTA-231 metal tray.

210-SFS Set. Above set without tray.

KTA-231 Metal Tray.

Metal trays have full length lips for hanging on edge of tool box.

F 208-FS-B Single Hex Flexocket Set. Eight Flexockets, FS-10A to FS-24 in KRA-223A metal box (6 1/16"x2 3/8"x1 3/16").

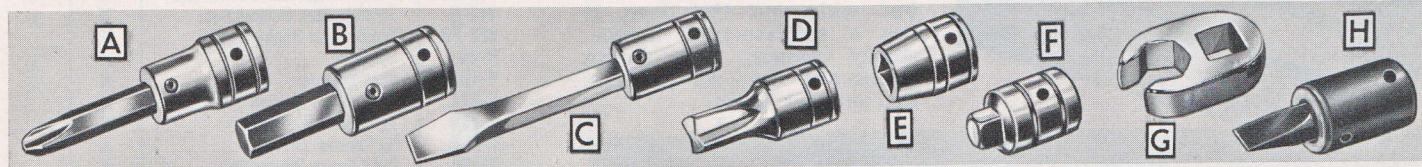
208-FS Set. Above set without box.

206A-FS Single Hex Flexocket Set. Contains 6 Flexockets, FS-14A to FS-24.

F 209-FU-B Double Hex Flexocket Set. 9 Flexockets, FU-12A to FU-28A in KRA-229 metal box (7 1/16"x2 3/8"x1 3/16").

209-FU Set. Above set without box.

206-FU Double Hex Flexocket Set. Contains 6 Flexockets, FU-14A to FU-24A.



A PHILLIPS SCREW DRIVERS

Complete Tool			Bit Stock No.	Roll-Pin Stock No.
Bit Size	Stock No.	Length		
2	★FP-22A	2 1/16"	★FP-22A-2	ESD-303
3	★FP-32A	2 5/16"	★FP-32A-2	ESD-300
4	★FP-41B	1 11/16"	★FP-41B-2	ESD-304
4	★FP-42B	2 7/16"	★FP-42B-2	ESD-304

B HEX HEAD SCREW DRIVERS

Complete Tool			Bit Stock No.	Roll Pin Stock No.
Hex Size	Stock No.	Length		
5/32"	★FA-5A	2 1/16"	★FA-5A-2	ESD-322
3/16"	★FA-6A	2 1/16"	★FA-6A-2	ESD-303
3/16"	★FAL-6	3 3/32"	★FAL-6-2	ESD-303
7/32"	★FA-7A	2 1/16"	★FA-7A-2	ESD-303
1/4"	★FA-8A	2 1/16"	★FA-8A-2	ESD-300
1/4"	★FAL-8	3 3/32"	★FAL-8-2	ESD-300
5/16"	★FA-10B	2 1/16"	★FA-10B-2	ESD-304
3/8"	★FA-12A	2 1/16"	★FA-12A-2	ESD-304

C STANDARD SCREW DRIVERS

Complete Tool			Bit Stock No.	Roll-Pin Stock No.
Blade Size	Stock No.	Length		
1/4" x 1 3/32"	★F-23D	3"	★F-23D-2	ESD-304
5/16" x 3/64"	★F-25D	3"	★F-25D-2	ESD-304
3/8" x 1/16"	★F-31D	3 7/16"	★F-31D-2	ESD-304

D CLUTCH TYPE SCREW DRIVERS

Handle clutch-type screws, also known as "butterfly" or "figure-8" screws, which are becoming increasingly popular for production assembly work of various kinds. Both are one piece units made short to handle work in close quarters. Machined from high quality alloy steel and then carefully heat treated to give exceptional strength and toughness to the tips. Overall length 1 3/4".

★F-29A Clutch Screw Driver. Bit diameter 3/8", fits 3/8" and 1 3/32" screws.

★F-30 Clutch Screw Driver. Bit diameter 1 9/64"

PIPE PLUG SOCKETS

These single square sockets are designed for use on the pipe plugs used on many current model cars. 3/8" sq. drive. 1" long.

E PP-409 Socket. 3/32" square opening.

E PP-410 Socket. 5/16" square opening.

E PP-412 Socket. 3/8" square opening.

F PPM-410 Pipe Plug Socket. This socket has a 5/16" square to fit the openings in 3/8" pipe plug fittings. 1 1/16" long, 3/8" square drive.

F PPM-412 Pipe Plug Socket. Has 3/8" square to fit recessed opening in 1/2" pipe plug. 1 1/8" long, fits 3/8" square drive handles.

Use of above sockets with Ferret handles gives you turning power for the tightest plugs. Do not use tip end of extension bars to turn pipe plugs—the strain can damage the square drive.

G HEX CROWFOOT WRENCHES

Prevent stripping corners on soft metal fittings found on oil lines and hydraulic lines of automatic transmissions and make access to these fittings easier. May be used with a Torquemeter—distance from center to center of openings is shown below.

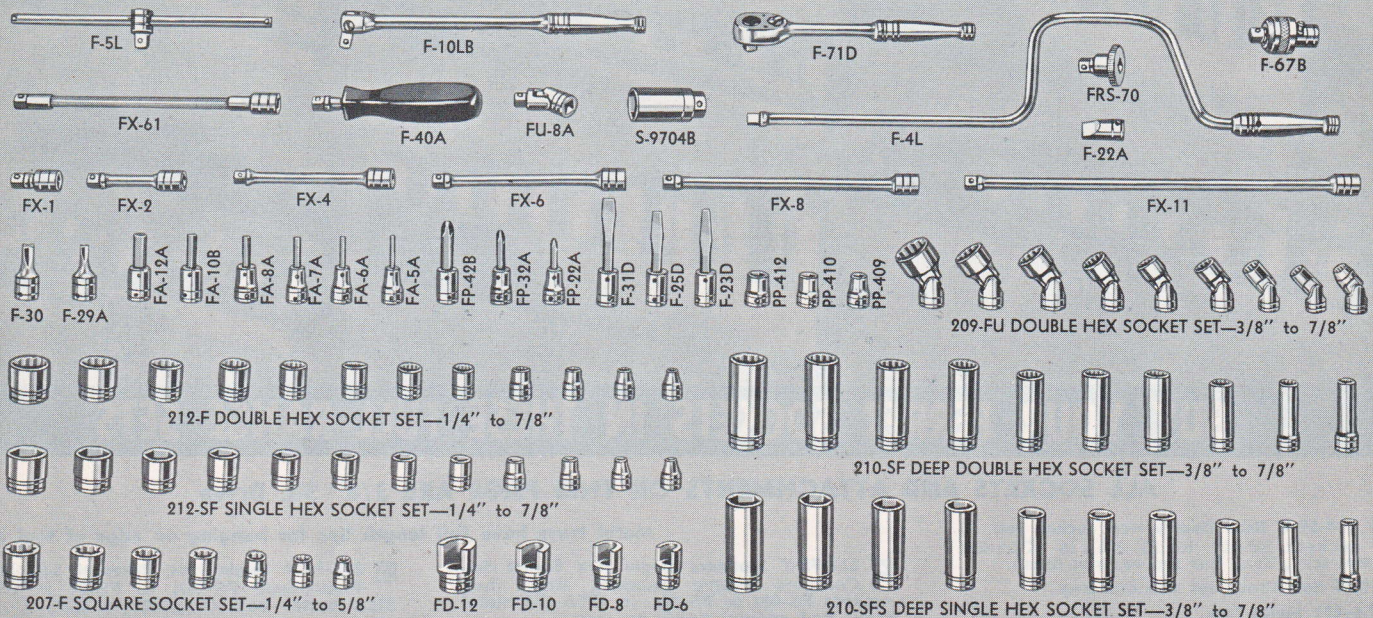
Wrench Size	Stock No.	Center to Center	Head Thickness	Head Width
7/16"	FRX-140	9/16"	3/8"	29 3/32"
1/2"	FRX-160	9/16"	3/8"	59 3/32"
9/16"	FRX-180	21 3/32"	1/16"	1 1/16"
5/8"	FRX-200	3 3/4"	1/16"	1 1/8"
11/16"	FRX-220	13 1/16"	1/2"	1 5/16"
3/4"	FRX-240	13 1/16"	1/2"	1 5/16"

H IMPACT SCREW DRIVERS

Recommended for use on the "Ferret" Impact Driver shown on page 25.

By limiting the distance of the impact travel the short bits in these drivers deliver maximum turning power at the screw head slot and lessen the possibilities of bit breakage. Don't use standard drives for Impact work.

Blade Width	Stock No.	Part Numbers	
		Bit	Pin
1/4"	★PF-23	★PF-23-2	ESD-300
5/16"	★PF-25A	★PF-25A-2	ESD-304
3/8"	★PF-31A	★PF-31A-2	ESD-304



**SPECIAL METAL BOX
FOR THESE TWO SETS**

KRA-250 Tool Box. Complete with tote tray. The tray is partitioned to provide convenient separation of sockets, etc., and has a full length top handle. The box is 18½" long, 6⅞" wide and 4½" deep. It has a suitcase-type handle, sturdy hinges, two spring clasps and hasp for padlock. Red enamel finish.

CONTENTS OF SETS

Stock No.	Description	298-F Set	247-F Set
209-FU	Hex Flexocket Set	X	X
210-SF	Deep Double Hex Socket Set	X	X
210-SFS	Deep Single Hex Socket Set	X	
212-F	Double Hex Socket Set	X	X
212-FS	Single Hex Socket Set	X	
F-4L	Speeder	X	X
F-10LB	Nut Spinner	X	X
F-22A	Drag Link Socket	X	
F-23D	¼" Screw Driver	X	
F-25D	⅝" Screw Driver	X	
F-29A	⅜" Clutch Screw Driver	X	
F-30	⅞" Clutch Screw Driver	X	
F-31D	⅜" Screw Driver	X	
F-40A	Plastic Handle	X	X
F-5L	Slide Bar	X	X
F-67B	Ratchet Adaptor	X	X
F-71D	Ratchet	X	X
F-308	¼" Square Socket	X	X
F-310	⅝" Square Socket	X	X
F-312	¾" Square Socket	X	X
F-314	⅞" Square Socket	X	
F-316	1½" Square Socket	X	
F-318	9/16" Square Socket	X	
F-320	5/8" Square Socket	X	
FA-5A	5/8" Hex Head Wrench	X	
FA-6A	¾" Hex Head Wrench	X	
FA-7A	7/8" Hex Head Wrench	X	
FA-8A	1½" Hex Head Wrench	X	
FA-10B	¾" Hex Head Wrench	X	
FA-12A	¾" Hex Head Wrench	X	
FD-6	¾" Weatherhead Socket	X	
FD-8	1½" Weatherhead Socket	X	
FD-10	5/8" Weatherhead Socket	X	
FD-12	¾" Weatherhead Socket	X	
FP-22A	No. 2 Phillips Screw Driver	X	
FP-32A	No. 3 Phillips Screw Driver	X	
FP-42A	No. 4 Phillips Screw Driver	X	
FRS-70	Ratchet Spinner	X	X
FU-8A	Universal Joint	X	X
FX-1	1½" Extension	X	
FX-2	3" Extension	X	X
FX-6	6" Extension	X	X
FX-4	4" Extension	X	X
FX-8	8" Extension	X	
FX-11	12" Extension	X	X
FX-61	Flexextension	X	X
PP-409	9/32" Pipe Plug Socket	X	
PP-410	5/16" Pipe Plug Socket	X	
PP-412	3/8" Pipe Plug Socket	X	
S-9704B	Spark Plug Socket	X	

THERE'S NOTHING BUSIER THAN A GOOD FERRET SET

When you buy a SNAP-ON Ferret set you own the best tools of their kind. They are quality throughout—quality that keeps busy tools in good working condition long after "cheapies" have hit the scrap heap. Behind their fine appearance is something you can't see—the quality of fine alloy steel, the close tolerances of all machining operations and electronically controlled heat treatment. The result is lightweight, tough, long lasting sockets and handles that perform better and cost less in the long run.

A 298-F-B Complete 98-Piece Ferret Set. (Top of Page.) Contents listed at right, complete with KRA-250 Tool Box.

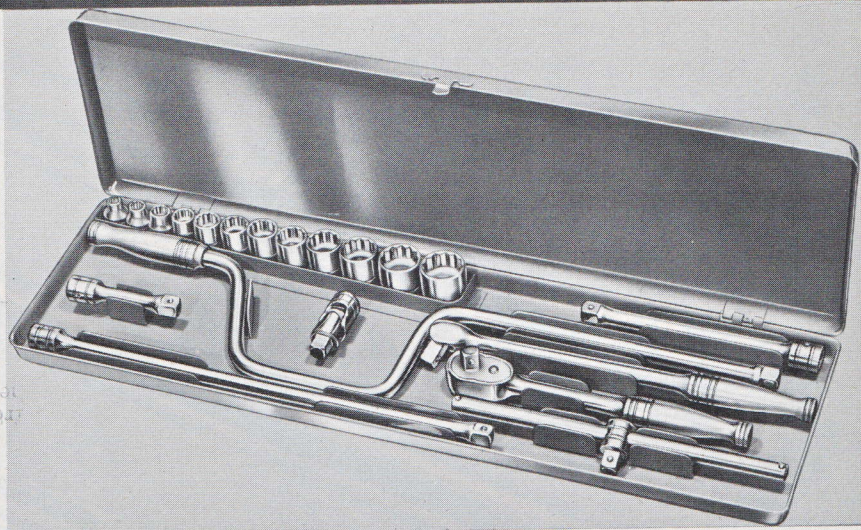
298-F Set. Above set without the Tool Box.

B 247-F-B Utility 47-piece Ferret Set. (Center of Page.) Contents listed at right, complete with KRA-250 Tool Box.

247-F Set. Above set without the tool box.

FERRET STANDARD WRENCH SETS—3/8" SQUARE DRIVE

Many years ago when we first introduced the 3/8" square drive series of socket wrenches and handles into the SNAP-ON family of fine tools we named them "Ferret" wrenches because like the Ferret, they were very strong, yet very slim and could be used in tight spots other wrenches couldn't reach. Today SNAP-ON "Ferret" socket wrenches and attachments are made better than ever and are the choice of better mechanics everywhere. Here is a popular set—available with Double Hex or Single Hex sockets, each with a fine basic selection of wrench handles. This carefully selected assortment provides the basic handle equipment and twelve sockets needed to handle a majority of nut turning jobs in automotive, aviation, refrigeration, and other service fields. Within its size range, no other set of wrenches can equal it for convenience and dependability. Set includes the specially designed KRA-281 Metal Box which measures 19 1/4" x 5 5/8" x 1 1/4".



DOUBLE HEX SET

220B-F-B "Ferret" 3/8" Sq. Drive Set (illustrated) consisting of the following in the KRA-281 Metal Box:

Handles: F-71D Ratchet; F-4L Speeder; F-5L Sliding Bar; F-10LB "Nut Spinner;" FX-2, FX-6, FX-11 Ext. Bars; FU-8A Universal Joint.

Sockets: Twelve Double Hex Sockets in the 212F set listed on page 23.

220B-F Ferret Set. Above set without KRA-281 Box.

SINGLE HEX SET

220A-F-B "Ferret" 3/8" Sq. Drive Set (not illustrated) consisting of the following in the KRA-281 Metal Box:

Handles: F-71D Ratchet; F-4L Speeder; F-5L Sliding Bar; F-10LB "Nut Spinner;" FX-2, FX-6, FX-11 Extension Bars and FU-8A Universal Joint.

Sockets: Set 212-FS consisting of 12 single hex sockets FS-081 to FS-281 inclusive. Tools are described on page 22.

220A-F "Ferret" Set. Above set without KRA-281 Box.

Snap-on IMPAK DRIVERS AND SETS IN 3/8" AND 1/2" SQUARE DRIVES

These SNAP-ON Impak Driver Sets are extremely useful for handling the tough, ornery jobs. They consist of the popular Impak Driver and an assortment of special impact-type sockets and drivers. In use, the bit or socket is positioned on the screw or nut . . . the Impak Driver is given a short twist to set the working cam and return spring, and the anvil end is then struck a sharp blow with a hammer.

The Driver can be set to deliver its rotary impact blow in either direction, and its powerful action will loosen screws and bolts even when they are wedged or rusted tight or will tighten them so they stay tight. You get greater safety, too, as there is less danger of twisting off bolt heads or screws by this method. Instructions are stamped on the tool.

"FERRET" 3/8" Sq. Drive IMPAK DRIVER SET

A 5022-PIT-B "Ferret" 3/8" Sq. Drive Impak Driver Set consisting of the following units, in KRA-120 Metal Box.

Stock No.	Description	Stock No.	Description	Stock No.	Description
PIT-12	Impak Driver	★PF-25A	5/16" Std. Screw Dr.	★FA-7A	7/32" Hex Head Dr.
PF-100	5/16" Hex. Socket	★PF-31A	3/8" Std. Screw Dr.	★FA-8A	1/4" Hex Head Dr.
PF-120	3/8" Hex. Socket	F-22A	11/16" H.D. Screw Dr.	★FA-10A	5/16" Hex Head Dr.
PF-140	7/16" Hex. Socket	★FP-22A	No. 2 Phillips Dr.	★FA-12A	3/8" Hex Head Dr.
PF-160	1 1/2" Hex. Socket	★FP-32A	No. 3 Phillips Dr.	★F-29A	Clutch Head Dr.
PF-180	9/16" Hex. Socket	★FP-41B	No. 4 Phillips Dr.	★F-30	Clutch Head Dr.
PF-200	5/8" Hex. Socket	★FP-42B	No. 4 Phillips Dr.	KRA-120	Metal Box,
★PF-23	1/4" Std. Screw Dr.	★FA-6A	3/16" Hex Head Dr.	Box has red enamel finish.	

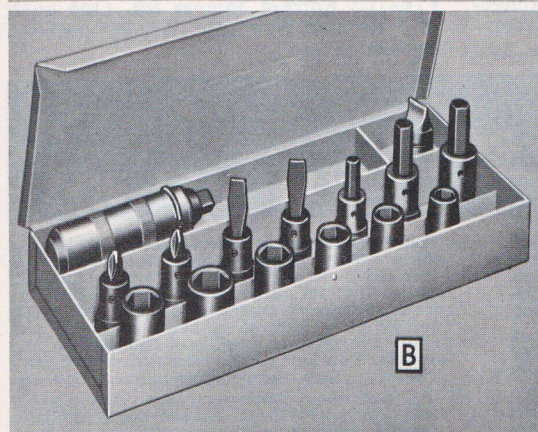
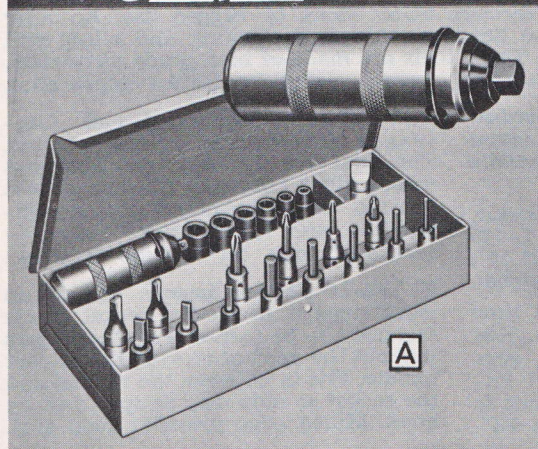
5022-PIT Set. Above set without the metal box.

MASTER 1/2" Sq. Drive IMPAK DRIVER SET

B 315-PIT-B Master 1/2" Sq. Drive Impak Driver Set consisting of the following units, in KRA-120 Metal Box.

Stock No.	Description	Stock No.	Description	Stock No.	Description
PIT-16	Impak-Driver	P-260	13/16" Hex Socket	★PSP-42A	No. 4 Phillips Dr.
P-160B	1 1/2" Hex Socket	A-26	3/4" H.D. Screw Dr.	★SA-12A	3/8" Hex Head Dr.
P-180	9/16" Hex Socket	★PSW-284A	1 1/16" Std. Screw Dr.	★SA-16A	1 1/2" Hex Head Dr.
P-200	5/8" Hex Socket	★PSW-325A	1 1/2" Std. Screw Dr.	★SA-18A	9/16" Hex Head Dr.
P-220	1 1/16" Hex Socket	★PSP-32A	No. 3 Phillips Dr.	KRA-120	Metal Box
P-240	3/4" Hex Socket				

315-PIT Same Set as above but without Metal Box.

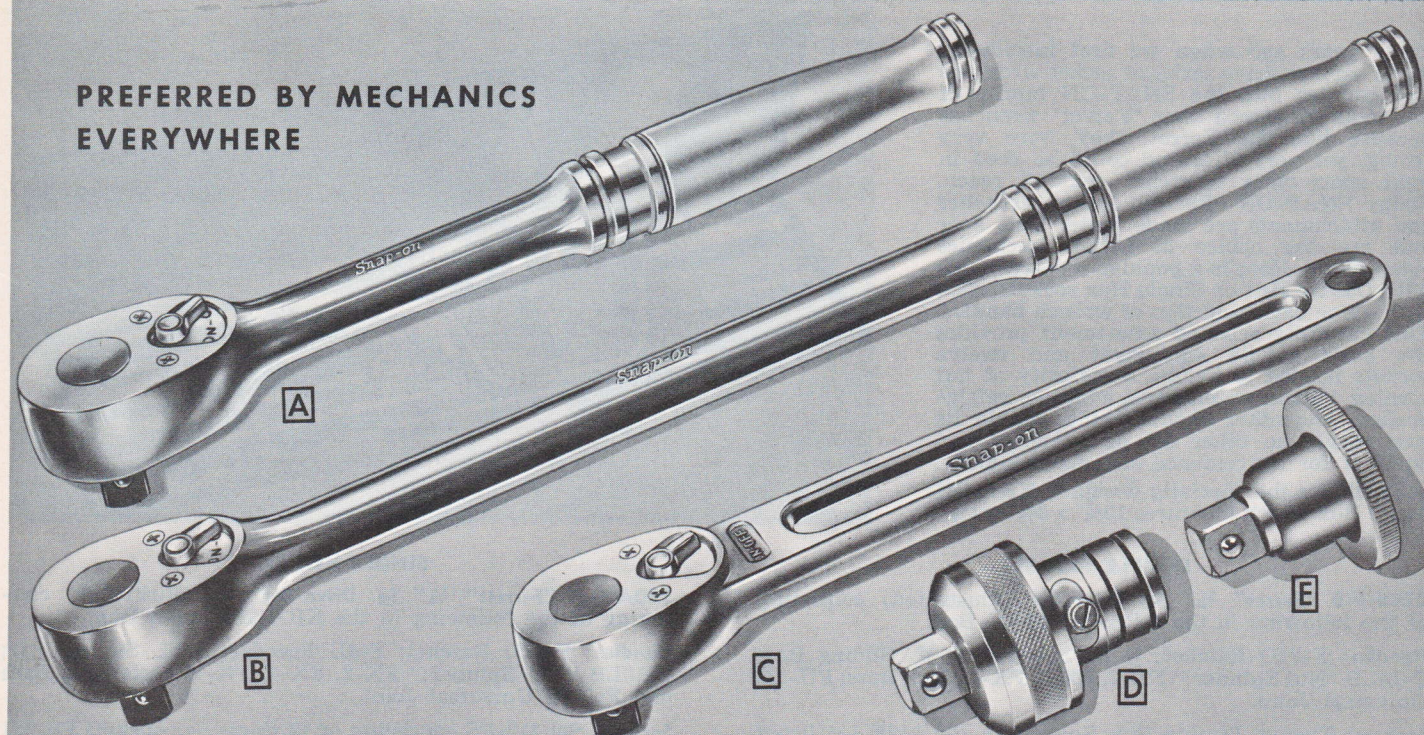


Top illustration shows the "Ferret" 3/8" square drive set No. 5022-PIT-B

Lower illustration shows the Master 1/2" square drive set No. 315-PIT-B

Snap-on MASTER RATCHETS — 1/2" SQUARE DRIVE

PREFERRED BY MECHANICS
EVERYWHERE



Snap-on

Features That Give You Most Value For Your Money

- Palm-Grip design handles give a secure hand grip and better appearance.
- You have a choice of four different SNAP-ON "Master" ratchet handles and ratchet adaptor.
- Welch Plugs are used in the friction grip on all handle square drive ends.
- Four way socket grip makes it easier and faster to interchange various units.
- Hot broached chip-curved openings give you smooth strong socket walls.
- High grade alloy steel only is used to produce these SNAP-ON wrenches.
- Controlled heat treating combines surface hardness with skin to core toughness in every part of every tool.
- SNAP-ON guarantee protects you . . . any wrench proving defective in material or workmanship will be replaced.

IT PAYS TO OWN THE VERY BEST AND
Snap-on MAKES THE VERY BEST TOOLS
YOU CAN BUY.

MASTER RATCHETS (1/2" Square Drive)

Snap-on ratchet wrenches are used and preferred by professional mechanics and engineers throughout industry. In every way they are fine examples of the precise engineering, machining, heat treating and finishing that characterizes all SNAP-ON products. The reverse ratcheting mechanisms have proved their unbeatable construction through many years of rugged use. An oiler hole or plug is provided in the head and frequent cleaning and oiling will keep the action working freely. These tools are made of high grade alloy steel, heat treated to give years of service, chrome plated for lasting appearance.

▲ **A L-710 Master "Supreme" Ratchet.** This tool has a 32 tooth ratchet action for efficient operation where handle swing is limited. 9 3/4" long.

▲ **B L-715 Master "Supreme" Ratchet.** Same 32 tooth action as the L-710 but having an overall length of 15". Many mechanics prefer this ratchet.

C 71M Master Ratchet. An old time favorite with many tools users. Has 20 tooth ratchet action. Pawls, gear drive and plate have gunmetal finish and the handle and head unit is chrome plated. Overall length is 9 3/4".

▲ **D 67C Ratchet Adaptor.** This ratcheting adaptor converts any combination of handle, extension and

socket into a ratcheting tool. Convenient side button reverses action. This unit can be used on many jobs where other "Master" ratchets cannot operate. Also extremely useful in combination with 1/2" sq. drive "Torqueme-ters. 2 9/16" long, 1 5/8" outside diameter.

E LRS-70 Ratchet Spinner. Speeds up work since it allows the socket or attachment to be turned with the fingers without the need of moving the ratchet handle. Fits in between the ratchet and the socket so nuts may be spun fast by hand. Milled edge provides good grip.

FTL-703 Ratchet Spinner Set. One each of 3 Ratchet Spinners, 1/4", 3/8" and 1/2" square drives.

SUPERIOR FEATURES MAKE

Snap-on

YOUR BEST BUY

High Quality Steel. Steels of differing alloy analysis are used in the manufacture of SNAP-ON tools. Each is carefully selected to impart the most desirable qualities of hardness, toughness, and durability according to the type of tool and its use.

Continued Research. In laboratories equipped with modern chemical and physical testing equipment, including machines constructed expressly for SNAP-ON and built to our exacting specifications, trained metallurgists conduct continuous research to develop the highest possible quality in our products.

Chamfered Openings. All SNAP-ON sockets have a chamfered bevel on the wrench opening to aid in guiding the socket onto the nut.

Hot Broaching. Examine a SNAP-ON socket and note the smooth, clean cut wrench corners and walls. This is the result of broaching while the socket is heated and contributes strength as well as accuracy to the tool.

Heat Treatment. Only the most advanced processes are good enough for SNAP-ON tools and furnaces of several types are used to impart the exact necessary degree of hardness, toughness and strength to every part.

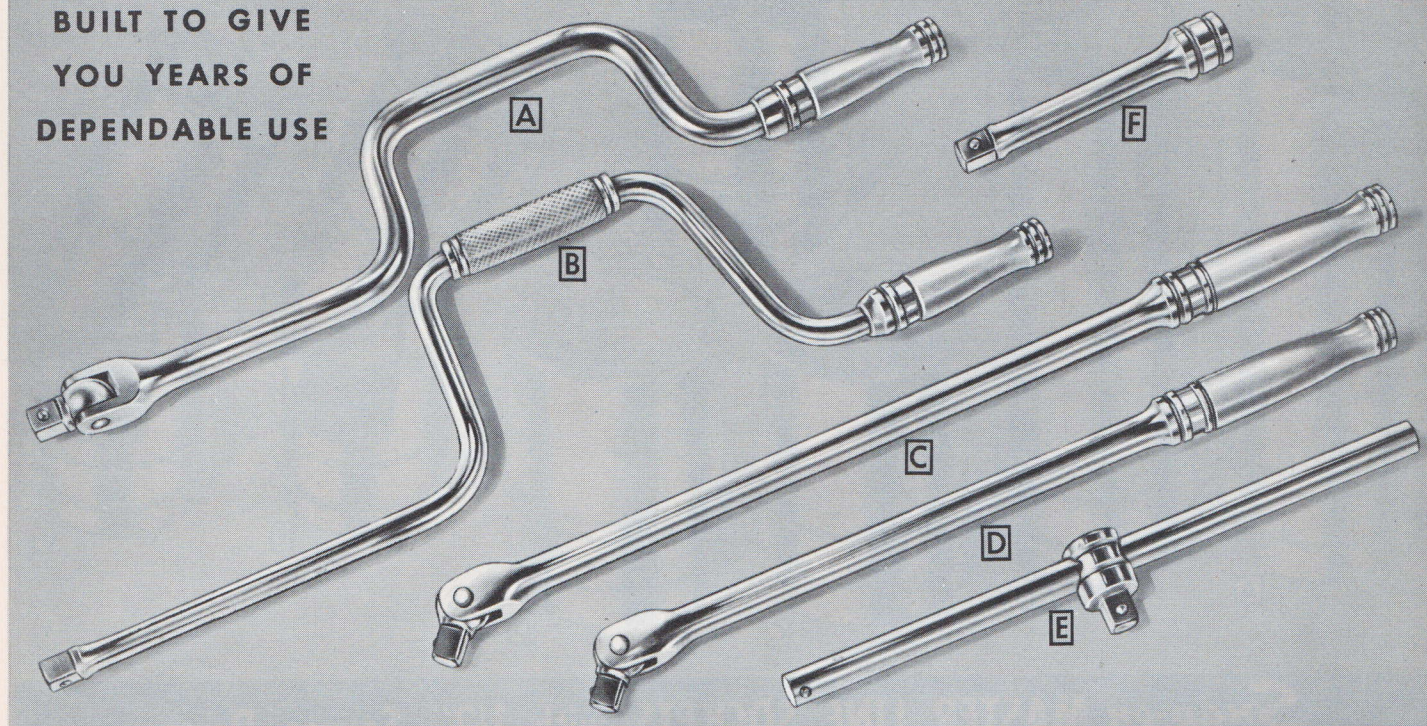
Appearance. SNAP-ON sockets and handles are chromium plated and polished to a lustrous rust resistant finish. They look like quality tools, they have the "feel" of quality—on the job they prove they are quality. Compare them with all others and you'll want SNAP-ON socket wrenches.

Thin, Straight Walled Sockets. The use of special alloy steels make possible sockets having incredible strength, yet with thin straight walls that set down over nuts placed extremely close to obstructions. The thin walls permit close control of heat treatment and allow the heat to penetrate thoroughly and evenly. You get greater strength and lighter weight . . . important factors in every day use.

Size Accuracy. Tolerances are very closely held, each SNAP-ON socket being made a definite number of thousandths larger than the nut it fits. This close tolerance means a snug fit on the nut and prevents rounding it or wearing the socket. Close tolerances of square drive openings and handle drive squares eliminates socket wobble while affording easy interchange of units.

MASTER 1/2" Sq. DRIVE HANDLES AND ATTACHMENTS

BUILT TO GIVE
YOU YEARS OF
DEPENDABLE USE



"NUT SPINNER" SPEEDER

▲ **SN-4M "Nut Spinner" Speeder.** A speeder, spinner and offset handle, in one. Straighten the hinged head to spin nut down and without taking it off the job, bend into offset position to tighten the nut. Shank length is 6 3/8", overall length 17 1/2". Sweep radius is 2 3/4".

NUT SPEEDER

▲ **B K-4L Speeder Handle.** The fastest handle to use where nuts are out in the open. Spins them on or off in a hurry. Both handle grips swivel for easy operation. Shank length is 8", overall length 19 1/2", radius of sweep 4 1/8". Chrome plated finish.

SLIDING TEE HANDLE

▲ **E S-12L Sliding Tee Handle.** A friction ball in the head contacts the center groove to make a practical Tee Handle. The head slides to end of the bar to form an efficient offset handle. Head is 1 3/4" deep. Chrome plated finish. 12" long, 5/8" diameter.

"NUT SPINNERS"

"Nut Spinners". The hinged socket receiving end allows you to work the tool in any position to clear obstructions and an inner spring holds the head at desired angle for easy placement on the job. Long handles give plenty of leverage for tightening nuts or breaking them loose. Straighten out the hinge and you have a spinner handle. This extremely versatile tool will prove to be a valuable time saver. Chrome plated finish.

▲ **D SN-15M "Nut Spinner"**...15" long

▲ **C SN-18M "Nut Spinner"**...18" long

▲ **SN-24A "Nut Spinner"**...24" long

EXTENSION BARS

▲ **F Extension Bars.** Made in seven lengths to give you greatest flexibility of use for your Master tool set. They give you that extra amount of reach that often means the difference between a tough job and an easy job. These tools have a chrome plated finish.

SX-2 Ext. Bar..... 2" long

SX-3 Ext. Bar..... 3 1/2" long

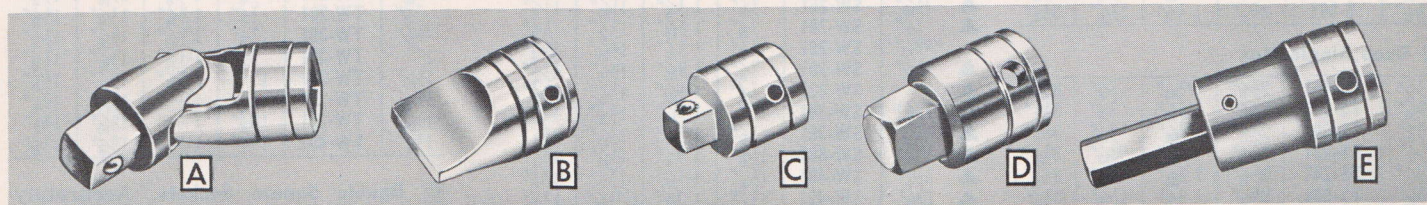
SX-5 Ext. Bar..... 5" long

SX-10 Ext. Bar..... 10" long

SX-20 Ext. Bar..... 20" long

SX-24 Ext. Bar..... 24" long

SX-36 Ext. Bar..... 36" long



ATTACHMENTS FOR MASTER HANDLES (1/2" Square Drive)

A UNIVERSAL JOINT

▲ **No. 8L Universal Joint.** Inner spring holds joint at any angle for easy application to the job without interfering with the swivel action of the tool in use. 1/2" square drive, 2 3/4" long.

▲ **B DRAG LINK ADJUSTERS**
Designed to service slotted nuts on steering gear assemblies, drag links and tie rods. 1/2" square drive. 1 11/16" long.

A-15 Adjuster. 1 7/32" x .150" blade.

A-17 Adjuster. 1 5/16" x .150" blade.

A-26 Adjuster. 3/4" x .109" blade.

▲ **C HANDLE ADAPTORS**
Interchange 3/8", 3/4" and 5/8" square drive units with 1/2" drive units.

★**HD-1**.....1/2" female—5/8" male

★**A-2**.....3/8" female—1/2" male

★**A-4**.....1/2" female—3/8" male

★**LA-12**.....1/2" female—3/4" male

★**LA-62**.....3/4" female—1/2" male

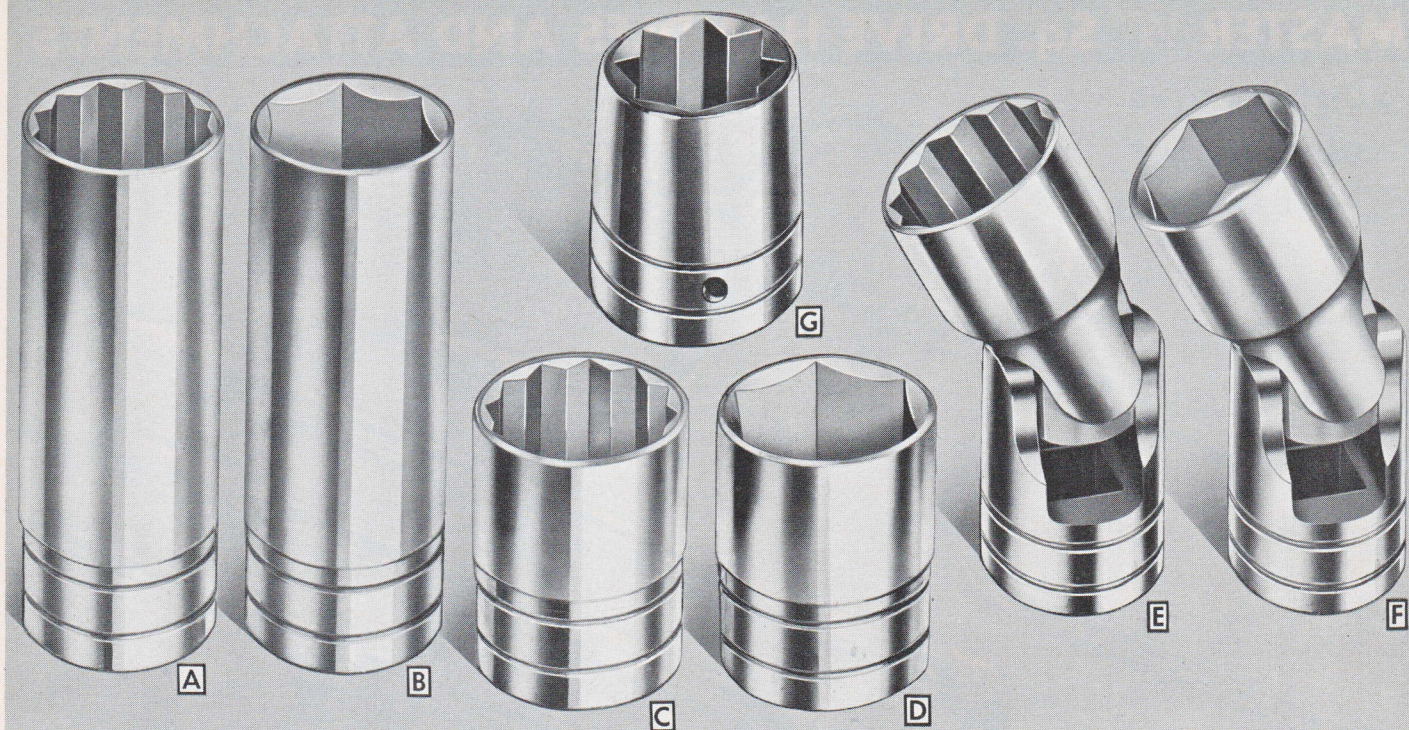
D PIPE PLUG SOCKET

SPP-416 Pipe Plug Socket. For turning 1961 Olds oil drain plugs which have a 1/2" double square recess and are installed almost flush with the bottom of the oil pan. Other types of wrenches won't do the job. Corners of the male drive are rounded and tapered for easy insertion into the fitting.

E HEX HEAD WRENCHES

Two piece construction allows individual heat treating of the parts for maximum service life. The bits are attached by means of Roll-Pins. 1/2" sq. drive.

Wrench Size	Complete Tool		Extra Bit		Roll Pin No.
	Stock No.	Length	Stock No.		
3/8"	★SA-12A	2 1/2"	★SA-12A-2		ESD-310
1/2"	★SA-16A	3 1/2"	★SA-16A-2		ESD-311
9/16"	★SA-18A	3 3/8"	★SA-18A-2		ESD-311



Snap-on MASTER LINE SOCKETS with 1/2" Square Drive

PRECISION MACHINED FOR ACCURATE NON-SLIP FIT!

Deep Hexagon Sockets. Ideal for spark plugs, spring "U" bolts and for nuts set down deeply over bolts . . . extra depth gives you the clearance necessary to service them properly.

Wrench Size	Stock No.	Bolt Clearance	O. D. Socket End	O. D. Drive End	Length
1/2"	S-161	25/8"	23/32"	7/8"	3 1/4"
9/16"	S-181	25/8"	13/16"	7/8"	3 1/4"
5/8"	S-201	25/8"	29/32"	7/8"	3 1/4"
11/16"	S-221	25/8"	31/32"	29/32"	3 1/4"
13/16"	S-241	25/8"	1 3/64"	31/32"	3 1/4"
15/16"	S-261	25/8"	1 1/8"	1 1/16"	3 1/4"
7/8"	S-281	25/8"	1 3/16"	1 1/8"	3 1/4"
15/16"	S-301	25/8"	1 3/32"	1 3/16"	3 1/4"
1"	S-321	25/8"	1 11/32"	1 1/4"	3 1/4"
1 1/16"	S-341	25/8"	1 7/16"	1 3/8"	3 1/4"
1 1/8"	S-361	25/8"	1 1/2"	1 7/16"	3 1/4"

▲ B Deep Single Hex

1/2"	TS-161	25/8"	47/64"	7/8"	3 1/4"
9/16"	TS-181	25/8"	13/16"	7/8"	3 1/4"
5/8"	TS-201	25/8"	57/64"	7/8"	3 1/4"
11/16"	TS-221	25/8"	31/32"	29/32"	3 1/4"
13/16"	TS-241	25/8"	1 3/64"	31/32"	3 1/4"
15/16"	TS-261	25/8"	1 1/8"	1 1/16"	3 1/4"
7/8"	TS-281	25/8"	1 3/16"	1 1/8"	3 1/4"

Hexagon "Flexockets" are extremely compact, short coupled, work freely from a wide angle to reach nuts in tight places. Have side locking hole to adapt them to industrial type handles.

E DOUBLE HEX FLEXOCKETS

Wrench Size	Stock No.	O.D. Socket End	O.D. Drive End	Length
9/16"	SUD-18	27/32"	15/16"	2 27/64"
5/8"	SUD-20	15/16"	15/16"	2 15/32"
11/16"	SUD-22	1"	1 1/16"	2 9/16"
3/4"	SUD-24	1 1/16"	1 1/8"	2 7/8"
13/16"	SUD-26	1 3/16"	1 5/8"	2 15/16"
7/8"	SUD-28	1 1/4"	1 1/2"	2 15/16"

C Double Hexagon Socket. Gives you a short turning arc for close quarter work. Thin walls permit entry into tight spots and carefully centered hot broaching equalizes wall strength. Chamfered openings guide socket over the nut or bolt head.

Wrench Size	Stock No.	Bolt Clearance	O. D. Socket End	O. D. Drive End	Length
3/8"	SW-121	7/8"	9/16"	7/8"	1 1/2"
1/2"	SW-141	7/8"	41/64"	7/8"	1 1/2"
5/8"	SW-161	7/8"	23/32"	7/8"	1 1/2"
11/16"	SW-181	7/8"	51/64"	7/8"	1 1/2"
13/16"	SW-191	7/8"	27/32"	7/8"	1 1/2"
15/16"	SW-201	7/8"	29/32"	7/8"	1 1/2"
1"	SW-221	7/8"	31/32"	29/32"	1 1/2"
1 1/16"	SW-241	7/8"	1 3/64"	31/32"	1 1/2"
1 1/8"	SW-251	7/8"	1 1/16"	1"	1 1/2"
1 1/4"	SW-261	7/8"	1 1/8"	1 1/16"	1 1/2"
1 1/2"	SW-281	7/8"	1 3/16"	1 1/8"	1 1/2"
1 3/4"	SW-291	7/8"	1 1/4"	1 3/16"	1 1/2"
1 5/8"	SW-301	7/8"	1 9/32"	1 3/8"	1 1/2"
1 3/4"	SW-321	7/8"	1 11/32"	1 1/4"	1 1/2"
1 7/8"	SW-341	1"	1 1/16"	1 3/8"	1 5/8"
1 5/8"	SW-361	1 1/8"	1 1/2"	1 1/16"	1 3/4"
1 3/4"	SW-381	1 1/8"	1 5/8"	1 9/16"	1 3/4"
1 1/2"	SW-401	1 1/4"	1 11/16"	1 5/8"	1 7/8"
1 5/8"	SW-421	1 1/4"	1 3/4"	1 11/16"	1 7/8"

*SW-291 is extra heavy for shackle work.

F SINGLE HEX FLEXOCKETS

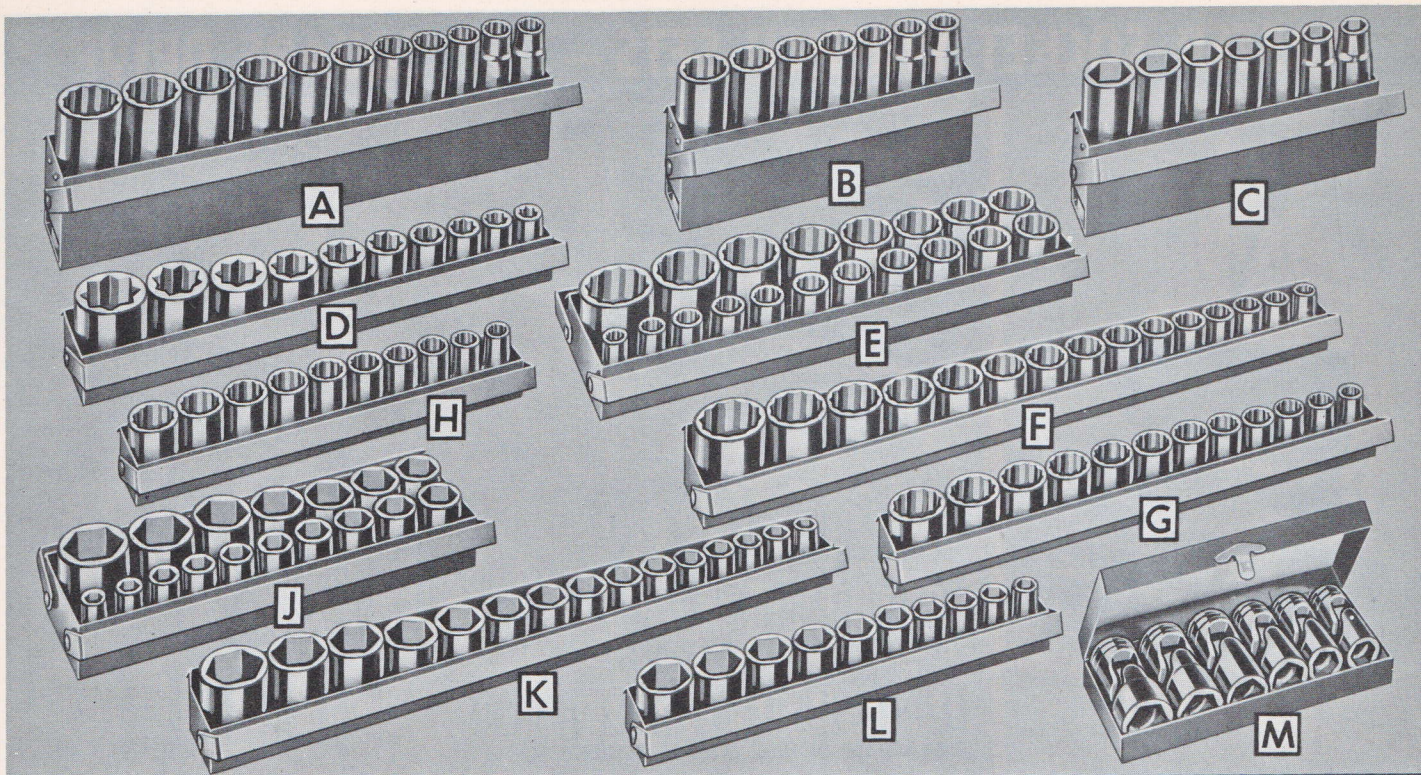
Wrench Size	Stock No.	O.D. Socket End	O.D. Drive End	Length
9/16"	SU-18	27/32"	15/16"	2 27/64"
5/8"	SU-20	15/16"	15/16"	2 15/32"
11/16"	SU-22	1 3/16"	1 3/32"	2 9/16"
3/4"	SU-24	1 3/32"	1 1/8"	2 7/8"
13/16"	SU-26	1 3/16"	1 5/8"	2 15/16"
7/8"	SU-28	1 1/4"	1 1/2"	2 15/16"

D Single Hexagon Socket. Give greater wall contact needed to turn tightly rusted on or worn nuts and bolts. They are also best for use on brass and other soft metal nuts and bolts because of greater wall contact.

Wrench Size	Stock No.	Bolt Clearance	O. D. Socket End	O. D. Drive End	Length
3/8"	TW-121	7/8"	9/16"	7/8"	1 1/2"
1/2"	TW-141	7/8"	41/64"	7/8"	1 1/2"
5/8"	TW-161	7/8"	23/32"	7/8"	1 1/2"
11/16"	TW-181	7/8"	51/64"	7/8"	1 1/2"
13/16"	TW-191	7/8"	27/32"	7/8"	1 1/2"
15/16"	TW-201	7/8"	29/32"	7/8"	1 1/2"
1"	TW-221	7/8"	31/32"	29/32"	1 1/2"
1 1/16"	TW-241	7/8"	1 3/64"	31/32"	1 1/2"
1 1/8"	TW-251	7/8"	1 1/16"	1"	1 1/2"
1 1/4"	TW-261	7/8"	1 1/8"	1 1/16"	1 1/2"
1 1/2"	TW-281	7/8"	1 3/16"	1 1/8"	1 1/2"
1 3/4"	TW-301	7/8"	1 9/32"	1 3/16"	1 1/2"
1 5/8"	TW-321	7/8"	1 11/32"	1 1/4"	1 1/2"
1 7/8"	TW-341	1"	1 1/16"	1 3/8"	1 5/8"
1 5/8"	TW-361	1 1/8"	1 1/2"	1 1/16"	1 3/4"
1 3/4"	TW-381	1 1/8"	1 5/8"	1 9/16"	1 3/4"
1 1/2"	TW-401	1 1/4"	1 11/16"	1 5/8"	1 7/8"

G Double Square Sockets. Accurately broached openings allow maximum working convenience where handle movement is limited.

Wrench Size	Stock No.	Bolt Clearance	O.D. Socket End	O.D. Drive End	Length
3/8"	SW-412	7/8"	23/32"	7/8"	1 1/2"
1/2"	SW-414	7/8"	51/64"	7/8"	1 1/2"
5/8"	SW-416	7/8"	29/32"	7/8"	1 1/2"
11/16"	SW-418	7/8"	31/32"	29/32"	1 1/2"
13/16"	SW-420	7/8"	1 1/16"	1"	1 1/2"
7/8"	SW-422	7/8"	1 3/16"	1 1/8"	1 1/2"
15/16"	SW-424	7/8"	1 9/32"	1 3/16"	1 1/2"
1"	SW-426	7/8"	1 1/16"	1 3/8"	1 5/8"
1 1/16"	SW-428	1 1/8"	1 1/2"	1 1/16"	1 3/4"
1 1/8"	SW-432	1 1/4"	1 11/16"	1 5/8"	1 7/8"



BUY YOUR *Snap-on* 1/2" SQUARE DRIVE SOCKETS BY THE SET

DEEP DOUBLE HEX SETS

A 311A-S-T Deep Double Hex Socket Set. 11 sockets, S-161 through S-361 in KTA-240 Metal Tray.

311A-S Set. Same set as above but without metal tray.

KTA-240 Metal Tray only.

B 307B-S-T Deep Double Hex Socket Set. 7 sockets, S-161 through S-281 in KTA-245 Metal Tray.

307B-S Set. Same set as above but without metal tray.

KTA-245 Metal Tray only.

DEEP SINGLE HEX SETS

C 307-TS-T Deep Single Hex Socket Set. 7 sockets, TS-161 through TS-281 in KTA-245 Metal Tray.

307-TS Set. Same set as above but without metal tray.

KTA-245 Metal Tray only.

DOUBLE SQUARE SETS

D 310A-SQ-T Double Square Socket Set. 10 sockets, SW-412 through SW-432 in KTA-239 Metal Tray. Tray handle holds sockets in place.

310A-SQ Set. Same set as above but without metal tray.

KTA-239 Metal Tray only.

DOUBLE HEX SETS

E 319-SW-T Double Hex Socket Set. 19 sockets, SW-121 through SW-421 in KTA-234 double row Metal Tray.

319-SW Set. Same set as above but without metal tray.

KTA-234 Metal Tray only.

F 315A-SW-T Double Hex Socket Set. 15 sockets, contains all sizes except SW-121, SW-291, SW-381 and SW-421 in KTA-215 Single row Metal Tray.

315A-SW Set. Same as above but without metal tray.

KTA-215 Metal Tray only.

G 312A-SW-T Double Hex Socket Set. 12 sockets: SW-141, SW-161, SW-181, SW-191, SW-201, SW-221, SW-241, SW-251, SW-261, SW-281, SW-301 and SW-321 in KTA-235 Metal Tray.

312A-SW Set. Same set as above but without metal tray.

KTA-235 Metal Tray only.

H 310A-SW-T Double Hex Socket Set. 10 sockets: SW-141, SW-161, SW-181, SW-191, SW-201, SW-221, SW-241, SW-251, SW-261 and SW-281 in KTA-236 Metal Tray.

310A-SW Set. Same as above but without metal tray.

KTA-236 Metal Tray only.

SINGLE HEX SETS

J 317-TW-TA Single Hex Socket Set. 17 sockets, TW-121 through TW-401 in KTA-242 double row Metal Tray.

317-TW Set. Above set, tools only.

KTA-242 Metal Tray only.

K 315A-TW-T Single Hex Socket Set. 15 sockets: TW-141, TW-161, TW-181, TW-191, TW-201, TW-221, TW-241, TW-251, TW-261, TW-281, TW-301, TW-321, TW-341, TW-361 and TW-401 in KTA-215 single row Metal Tray.

315A-TW Set. Above set, tools only.

KTA-215 Metal Tray only.

L 310A-TW-T Single Hex Socket Set. 10 sockets: TW-141, TW-161, TW-181, TW-201, TW-221, TW-241, TW-261, TW-281, TW-301 and TW-321 in KTA-237 Metal Tray.

310A-TW Set. Above set, tools only.

KTA-237 Metal Tray only.

M 306-SU-B Single Hexagon Flexsocket Set. 6 sockets, SU-18 through SU-28 in KRA-206 Metal Box.

306-SU Set. Same set, tools only.

306-SUD-B Double Hexagon Flexsocket Set. 6 Flexsockets, SUD-18 to SUD-28 in KRA-206 Metal Box.

306-SUD Set. Above set, tools only.

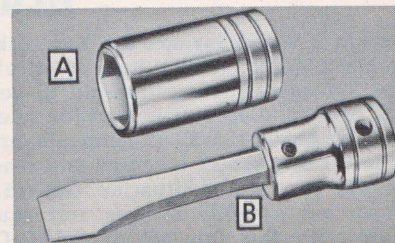
KRA-206 Metal Box only.

ADDITIONAL 1/2" SQUARE DRIVE ATTACHMENTS

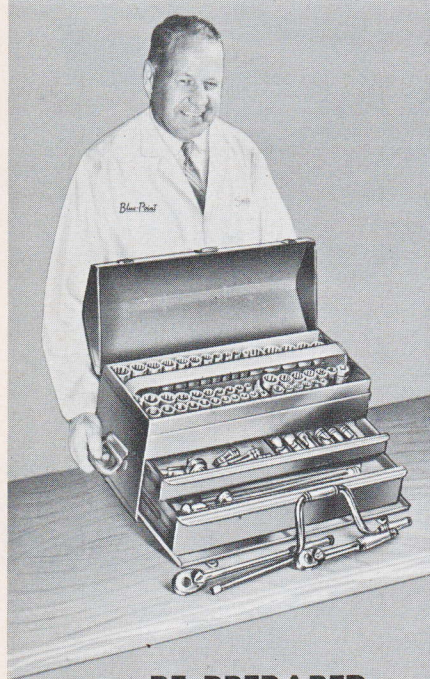
A TW-241S Semi-Deep Single Hex Socket. Has thick walls and deep broaching to give better turning power for "Acorn" nuts and other toughies. It is 2" long, 1 1/8" outside diam., and has side hole for engaging locking button or friction ball.

B Screw Driver Attachments. Can be used on any master 1/2" square drive handle.

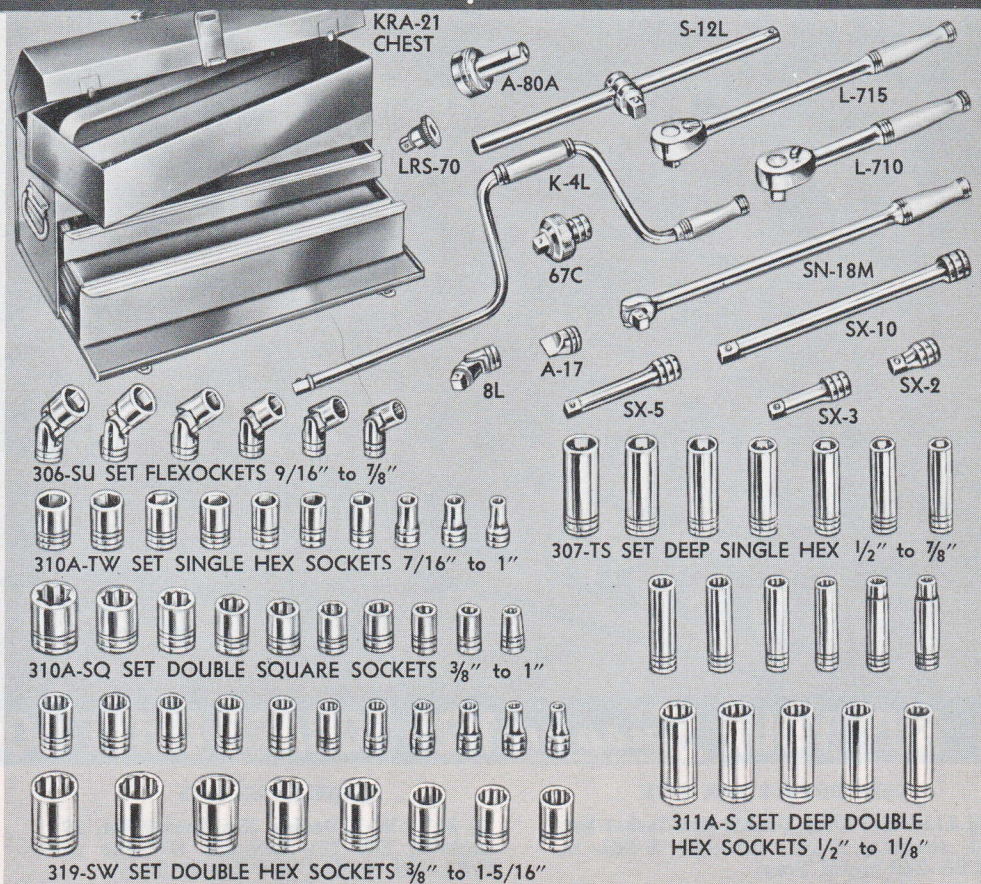
Bit Size	Complete Tool		Bit Only Stock No.	Roll Pin No.
	Stock No.	Lgth.		
7/16" x 1/16"	★SW-284A	4"	★SW-284A-2	ESD-310
1/2" x 1/16"	★SW-324A	4"	★SW-324A-2	ESD-310
5/8" x 5/64"	★SW-405A	4"	★SW-405A-2	ESD-311



MASTER SOCKET WRENCH SETS—1/2" SQUARE DRIVE



**BE PREPARED
FOR ANY SIZE JOB
WITH THIS PROFESSIONAL
SELECTION OF WRENCHES**



377-M-B MASTER "GENERAL SET IN KRA-21 MECHANIKIT—77 TOOLS

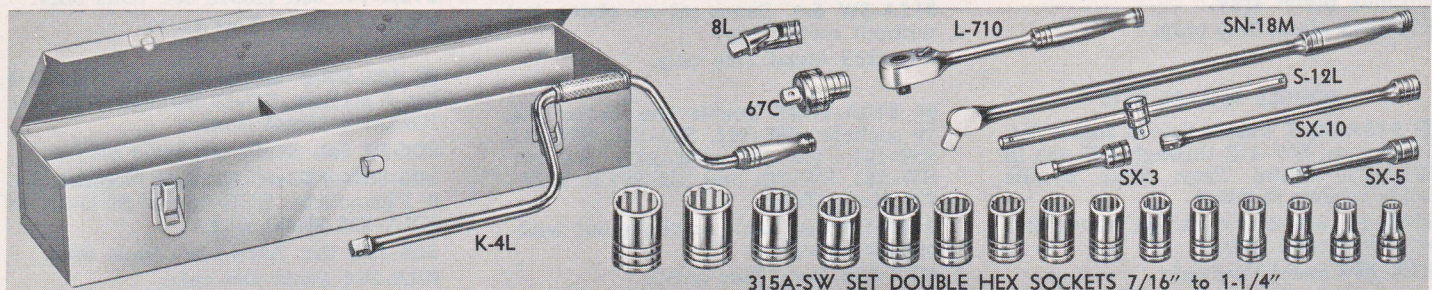
377-M-B Master General Set. Here is our most complete set of Master (1/2" square drive) wrenches. Assembled for the mechanic who wants a full range of socket sizes and types together with a wide selection of handle equipment. This versatile assortment of matched units contributes speed and convenience to the overall proficiency of top notch mechanics in every type of service and maintenance work. Treat yourself to greater working ease with this outstanding set of SNAP-ON quality wrenches.

The KRA-21 "Mechanikit" shown above is the ideal container for these tools . . . its tote-tray and drawers are partitioned for orderly tool arrangements and safekeeping.

377-M Master General Set. Without the Mechanikit.

Contents of 377-M-B Master General Set

Stock No.	Description	Page	Stock No.	Description	Page
SN-18M	Nut Spinner, 18"	27	SX-10	10" Extension Bar	27
S-12L	Sliding Bar, 12"	27	A-17	Drag Link Adjuster	27
K-4L	Speeder, 19 1/2"	27	A-80A	Stud Remover	32
L-710	Ratchet, 10"	26	319-SW	Double Hex Socket Set	29
L-715	Ratchet, 15"	26	310A-TW	Single Hex Socket Set	29
LRS-70	Ratchet Spinner	26	311A-S	Deep Double Hex Socket Set	29
67C	Ratchet Adaptor	26	307-TS	Deep Single Hex Socket Set	29
8L	Universal Joint	27	310A-SQ	Square Socket Set	29
SX-2	2" Extension Bar	27	306-SU	Flexocket Set	29
SX-3	3 1/2" Extension Bar	27	KRA-21	Mechanikit	5
SX-5	5" Extension Bar	27			



324-M-B MASTER "SUPREME" SET—24 Most Needed Tools

324-M-B Master Supreme Set. The socket range of 7/16" to 1 1/4" will turn practically any hexagon nut encountered in general servicing operations and the selection of handles and attachments provide turning speed, leverage and reach to take care of any situation. Get rid of worn out knuckle busters and equip now with this fine set of SNAP-ON

wrenches. Make this set the foundation for a modern and efficient tool outfit. The KRA-280 metal case has separate compartments for sockets. A metal handle is fastened to the cover which is secured by sturdy hinges and grip-clip. The case is 23" x 7 1/4" x 3 5/8" high and has red enamel finish.

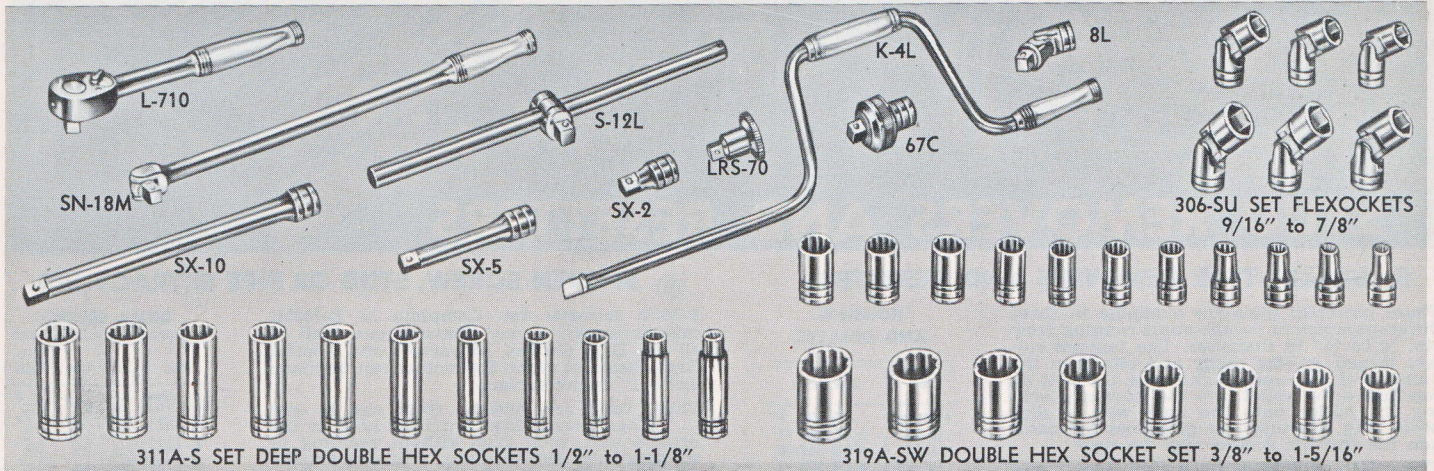
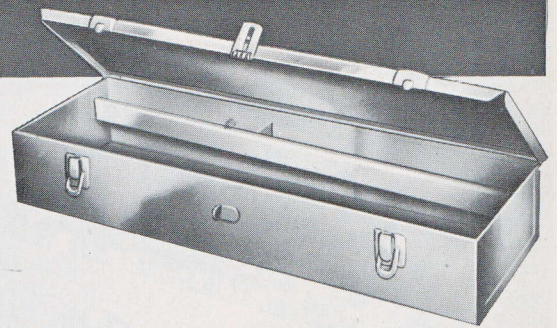
324-M Set. Above set without case.

Stock No.	Description	Page
L-710	Master Ratchet Wrench 9 3/4" long	26
K-4L	Master Nut Speeder 19 1/2" long	27
67C	Ratchet Adaptor	26
SN-18M	Master Nut Spinner 18" long	27
S-12L	Master Sliding Bar 12" long	27
SX-3	Master Extension Bar 3 1/2" long	27
SX-5	Master Extension Bar 5" long	27
SX-10	Master Extension Bar 10" long	27
8L	Master Universal Joint	27
315A-SW	Master Set of 15 Double Hex Sockets	29
KRA-280	Metal Box, Red Enamel Finish	31

KRA-280 BOX FOR SETS BELOW

KRA-280 Tool Box. All of the Master $\frac{1}{2}$ " Drive Sets listed below are available in this new, sturdy metal box. It is specially compartmented to segregate sockets from handles so that they are easy to select. There is plenty of room with extra space for additional items. Here is a box of

such great utility that you will want it and use it for other purposes. Heavy metal welded throughout. Has trays along both top edges. $7\frac{1}{4}$ " wide, 23" long and $3\frac{3}{8}$ " deep. Has two clasps on front and padlock hasp. Suit-case type handle at top. Red enameled finish.

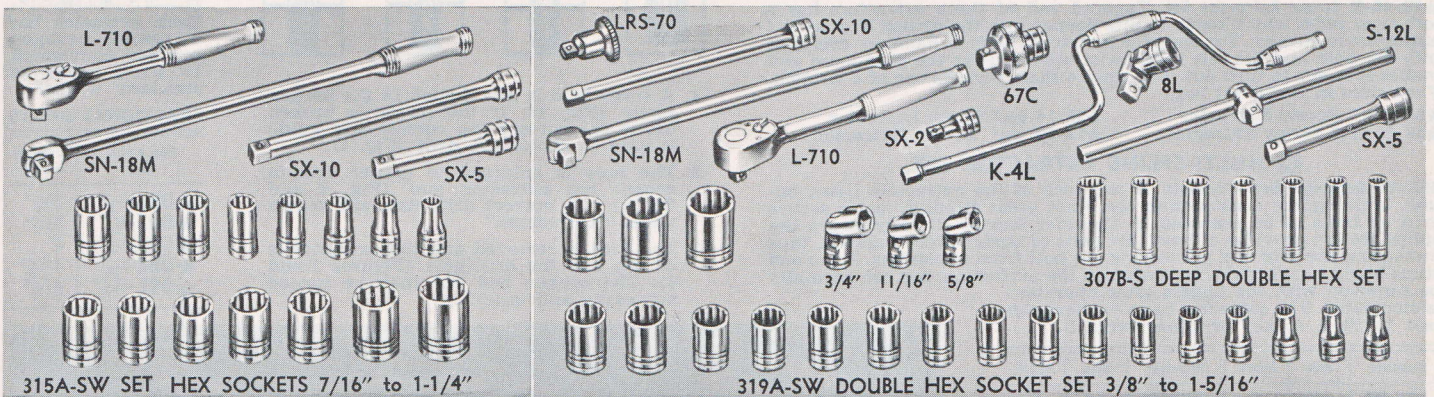


346-M-B MASTER MECHANICS SET—46 TOOLS

346-M-B Master Mechanics Set. Here is a Master $\frac{1}{2}$ " Drive Set that has been asked for by many mechanics. It contains the tools most used so you get the most tool for your money. Has a wide range of socket sizes from $\frac{1}{2}$ " to $1\frac{1}{16}$ ". With 10 handles and attachments this set will handle numerous nut and bolt turning operations quickly, safely and easily. Includes eleven deep double hex sockets from $\frac{1}{2}$ " through $1\frac{1}{16}$ "; nineteen standard double hex sockets from $\frac{1}{2}$ " through $1\frac{1}{16}$ "; six single hex "Flexockets" from $\frac{1}{16}$ " through $\frac{1}{8}$ " and the nine handles and attachments as listed at the right. Set includes the KRA-280 box described and shown above.

Stock No.	Description	Stock No.	Description
L-710	10" Ratchet	SX-5	5" Extension Bar
LRS-70	Ratchet Spinner	SX-10	10" Extension Bar
67C	Ratchet Adaptor	311A-S	Master Deep Double Hex Socket Set
SN-18M	"Nut Spinner" 18"	319A-SW	Master Double Hex Socket Set
S-12L	Sliding "T" Handle 12"	306-SU	Master "Flexocket" Set
8L	Universal Joint	KRA-280	Metal Tool Box
K-4L	Speeder Handle 19 $\frac{1}{2}$ "		
SX-2	2" Extension Bar		

346-M Master Mechanic Set without KRA-280 box.



319-M-B MASTER BASIC SET—19 Tools

319-M-B Master Basic Set. Pictured above is a basic selection of $\frac{1}{2}$ " square drive SNAP-ON matched unit wrenches. It's the ideal starter set for the alert mechanic and gives him the most useful tools possible in a small set. The right tools for the job makes your work easier. Other "matched units" can be added as the need arises. The KRA-280 metal box shown, conveniently holds all the units with room for additional tools. Box has carrying handle on the lid. It measures 23" x $7\frac{1}{4}$ " x $3\frac{3}{8}$ " high and is finished in red enamel.

319-M Master Basic Set. Tools only.

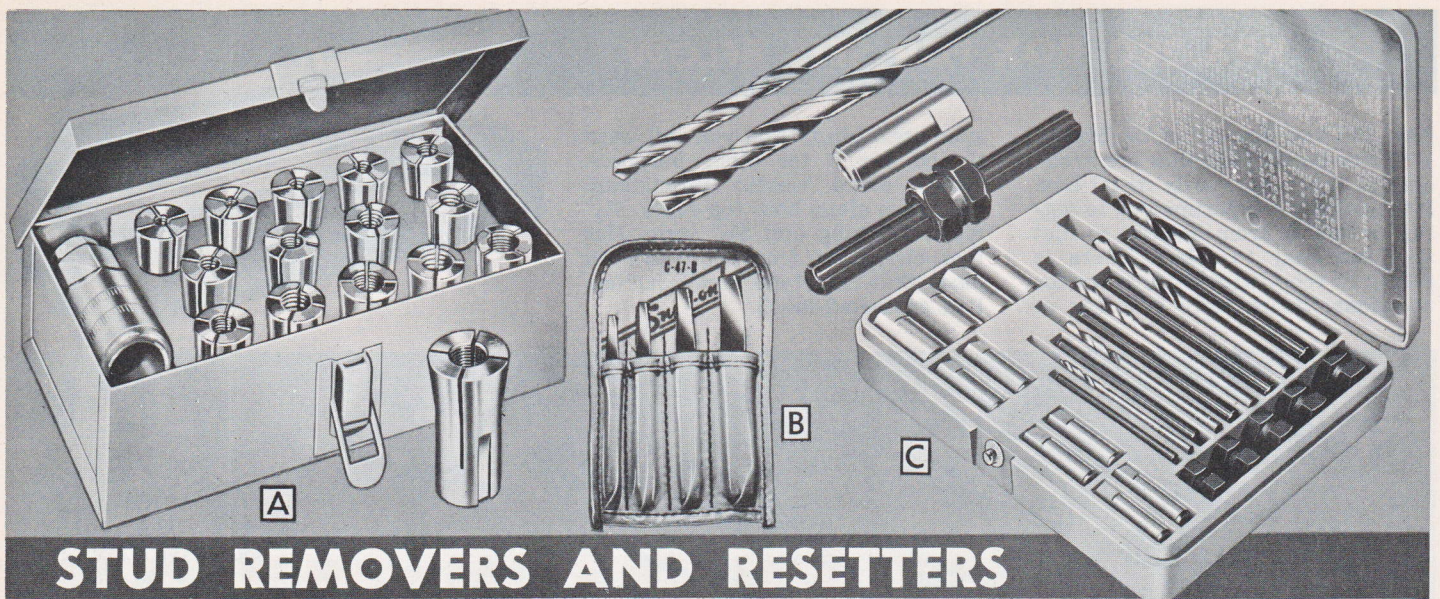
Stock No.	Description
SN-18M	Master "Nut Spinner" 18"
L-710	Master Ratchet Wrench
SX-5	Master Ext. Bar. 5"
SX-10	Master Ext. Bar 10"
315A-SW	Master Double Hex Socket Set
KRA-280	Box. Red Enamel Finish

339-M-B MASTER UTILITY SET—38 TOOLS

339-M-B Master Utility Set. Set includes 18 double hex sockets in sizes $\frac{3}{8}$ " to $1\frac{1}{4}$ ", 7 popular sizes of deep hex sockets for spark plug work and jobs where bolts protrude, and 3 hex flexockets. The ten handles and attachments provide great versatility of use. Rid your kit of obsolete, time-wasting, "misfits" and treat yourself to greater working ease with this set of SNAP-ON matched units. Set includes KRA-280 metal box. Box has carrying handle on the lid and measures 23" x $7\frac{1}{4}$ " x $3\frac{3}{8}$ " high. Red enamel finish.

339-M Master Utility Set. Same set as above but tools only.

Stock No.	Description
SN-18M	Master "Nut Spinner"—18" long
S-12L	Master Sliding Bar—12" long
K-4L	Master Speeder—19 $\frac{1}{2}$ " long
L-710	Master Ratchet Wrench
LRS-70	Master Ratchet Spinner
67C	Master Ratchet Adaptor Wrench
SX-10	Master Extension Bar—10" long
SX-5	Master Extension Bar—5" long
SX-2	Master Extension Bar—2" long
8L	Master Universal Joint
319-SW	Master Double Hexagon Socket Set
307B-S	Master Deep Double Hex. Socket Set
SU-20	Master "Flexocket"— $\frac{5}{8}$ " wrench size
SU-22	Master "Flexocket"— $\frac{11}{16}$ " wrench size
SU-24	Master "Flexocket"— $\frac{3}{4}$ " wrench size
KRA-280	Metal Box. Red Enamel Finish



STUD REMOVERS AND RESETTERS

A COLLET-TYPE REMOVERS AND RESETTERS

These powerful tools are available in three different series to handle studs ranging from No. 10 to $\frac{3}{8}$ " in diameter. The tapered collets thread on the studs and slip into the housing of the unit. Tightening the bolt on top draws the collet into the housing, locking the puller onto the stud with a slip-proof grip. Because this grip does not damage the threads a stud may be reset.

The collets will work on a stud if only two or three threads are exposed or remain on the broken end. Smooth studs or dowels may be threaded with the correct size die and then removed in the usual manner. The standard housing is $1\frac{3}{8}$ " diameter and fits any $1\frac{1}{8}$ " wrench.

STANDARD SIZE PULLER SETS

★CG-515-B Complete Set. contains the CG-500-2 Housing and 500-series collets except CG-500-17 and CG-500-18. Has a range of $\frac{1}{4}$ " to $\frac{5}{8}$ ". Complete in metal box KRA-150.

★CG-515 Set. Above set without the box.

★CG-500 Set. Contains the CG-500-2 Housing and the CG-500-8, CG-500-10 and CG-500-12 collets. For use on $\frac{3}{8}$ "-24, $\frac{7}{16}$ "-20 and $\frac{1}{2}$ "-20 threads.

C TAPER-BIT SCREW EXTRACTOR SET

★SR-40-K Screw Extractor Set. Tapered end of these extractors has a left hand twist which tends to bite deeper into the drilled stud as the extractor is turned. Tapping the extractor with a hammer drives it into the hole and the left hand twist often breaks the stud loose and makes it easier to turn out. The square shaft permits use of a wrench. Four sizes in C-47B kit bag.

★SR-4 $\frac{1}{8}$ " Screw Extractor

★SR-14 $\frac{7}{32}$ " Screw Extractor

★SR-10 $\frac{9}{64}$ " Screw Extractor

★SR-20 $\frac{5}{16}$ " Screw Extractor

D MULTI-SPLINE EXTRACTOR SET

REX-10 Extractor Set. Consists of one each of the extractors listed below. Multi-Spline construction combines great strength and a secure grip on bolts to be removed. A shoulder located directly above the spline section provides a "seat" for bolts or studs to force against, thus increasing the grip and preventing the bolt from expanding. Bolts and studs being removed do not wedge on the extractors, but can normally be removed with the fingers after operation is completed. The extractor has a $\frac{1}{4}$ " hexagon end to fit a socket or other wrench.

Number	Size	Mark	Number	Size	Mark
REX-104	$\frac{1}{8}$ "	A	REX-109	$\frac{9}{32}$ "	F
REX-105	$\frac{5}{16}$ "	B	REX-110	$\frac{11}{16}$ "	G
REX-106	$\frac{3}{8}$ "	C	REX-111	$\frac{1}{2}$ "	H
REX-107	$\frac{7}{16}$ "	D	REX-112	$\frac{5}{8}$ "	I
REX-108	$\frac{1}{2}$ "	E	REX-113	$\frac{3}{4}$ "	J

D A-80A Stud Puller. Patent No. 2,613,564. Capacity $\frac{1}{4}$ " to $\frac{1}{2}$ ". Three jaws built into the tool automatically close to stud size and grip when pressure is applied... release the pressure and the jaws release providing a "built in" ratchet action. Needs only 1" clearance between stud and any obstruction, $\frac{1}{2}$ " protrusion of stud provides a good grip, long studs can run through the top opening. Use with $\frac{1}{4}$ " square drive handle or 1" wrench.

E A-54 Stud Remover. $\frac{1}{16}$ " to $\frac{1}{2}$ " capacity. "V" shaped racks grip the stud as the unit is turned. Use $\frac{1}{4}$ " square drive handle. Grip releases when pressure is relieved. Consists of four parts.

A-50A Housing only

A-50-3B Rack $\frac{1}{16}$ "- $\frac{1}{2}$ " capacity

A-50B-1 Driving Gear

A-50-4B Rack $\frac{1}{16}$ "- $\frac{3}{8}$ " capacity

A-50 Stud Remover. $\frac{1}{16}$ " to $\frac{1}{2}$ " capacity. Same unit as above with A-50-3B rack only.

HOUSING AND COLLETS

Size	Stock No.
Housing	CG-500-2
10-24	★CG-500-17
10-32	★CG-500-18
$\frac{1}{4}$ "-20	★CG-500-3
$\frac{1}{4}$ "-28	★CG-500-4
$\frac{5}{16}$ "-18	★CG-500-5
$\frac{5}{16}$ "-24	★CG-500-6
$\frac{3}{8}$ "-16	★CG-500-7
$\frac{3}{8}$ "-24	★CG-500-8
$\frac{1}{2}$ "-14	★CG-500-9
$\frac{1}{2}$ "-20	★CG-500-10
$\frac{1}{2}$ "-13	★CG-500-11
$\frac{1}{2}$ "-20	★CG-500-12
$\frac{5}{8}$ "-12	★CG-500-13
$\frac{5}{8}$ "-18	★CG-500-14
$\frac{5}{8}$ "-11	★CG-500-15
$\frac{5}{8}$ "-18	★CG-500-16

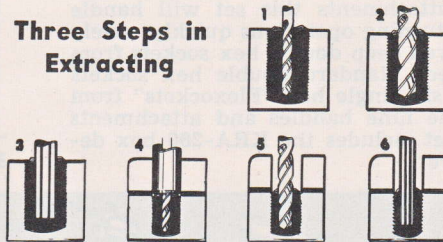
Note: Larger sizes for bolts up to 3" diameter are available

B BROKEN SCREW, STUD OR PIPE EXTRACTORS

E-1020 Extractor Set. Complete in E-1020B case as shown above. Contains one each of all the Drill Guides. Extractors and Special Drills listed at right. Extractors can be made up to 1" below surface.

These tools are straight from end to end... when driven into a drilled hole in the broken unit, they grip without reaming or slipping, and furthermore, will not expand or distort sidewalls of holes no matter how thin or how far the tool is driven in. Tightly embedded broken threaded ends can now be drilled out to thin walled shells, safely seized with one of these tools and easily turned out. This is the only basically correct method of doing the job... tapered extractors often expand the broken unit making it bind tighter than it did before.

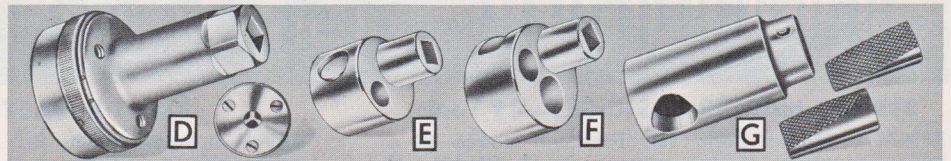
Three Steps in Extracting



1. A small hole is first drilled in the broken screw (Fig. 1); if the screw is broken below the surface the correct size guide is used to center the drill (Fig. 4).

2. The hole is enlarged to proper size to accept the extractor tool (Fig. 2 and Fig. 5)... correct drill sizes are shown under "Extractors."

3. The drill is removed and the extractor is driven into the drill hole (Figures 3 and 6). The broken end can then be turned out easily and quickly.



CAM AND WEDGE-TYPE STUD PULLERS

F A-36 Stud Remover. $\frac{1}{2}$ " to $\frac{3}{4}$ " capacity. Knurled alloy steel wheel grips soft or hardened studs. The driving shank extends through both sides of the housing to provide a bearing surface on each side of the wheel and prevent binding. Use with $\frac{1}{2}$ " square drive handle.

A-36A.....Stud Remover Housing only.

A-36B.....Stud Remover Driving Shank.

A-36C.....Stud Remover Gripping Wheel.

G LA-55A Heavy Duty Stud Puller. $\frac{9}{16}$ " to 1" capacity. Works on the wedge principle: grip can be released by turning tool in reverse direction. Tool is machined from alloy steel. Two sizes of steel wedges included with the unit are heat treated to extreme hardness and are cross milled to assure a firm grip on the studs. Use with $\frac{3}{4}$ " square drive wrench handle.

DRILL GUIDES

No.	O.D.	I.D.	Use Drill
E-921	$\frac{9}{32}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "
E-1021	$\frac{5}{16}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "
E-1121	$\frac{11}{32}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "
E-1221	$\frac{3}{8}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "
E-1321	$\frac{13}{32}$ "	$\frac{3}{16}$ "	$\frac{3}{16}$ "
E-1421	$\frac{7}{16}$ "	$\frac{3}{16}$ "	$\frac{3}{16}$ "
E-1521	$\frac{15}{32}$ "	$\frac{3}{16}$ "	$\frac{3}{16}$ "
E-1621	$\frac{1}{2}$ "	$\frac{3}{16}$ "	$\frac{3}{16}$ "
E-1721	$\frac{17}{32}$ "	$\frac{1}{2}$ "	$\frac{1}{2}$ "
E-1821	$\frac{9}{16}$ "	$\frac{1}{2}$ "	$\frac{1}{2}$ "

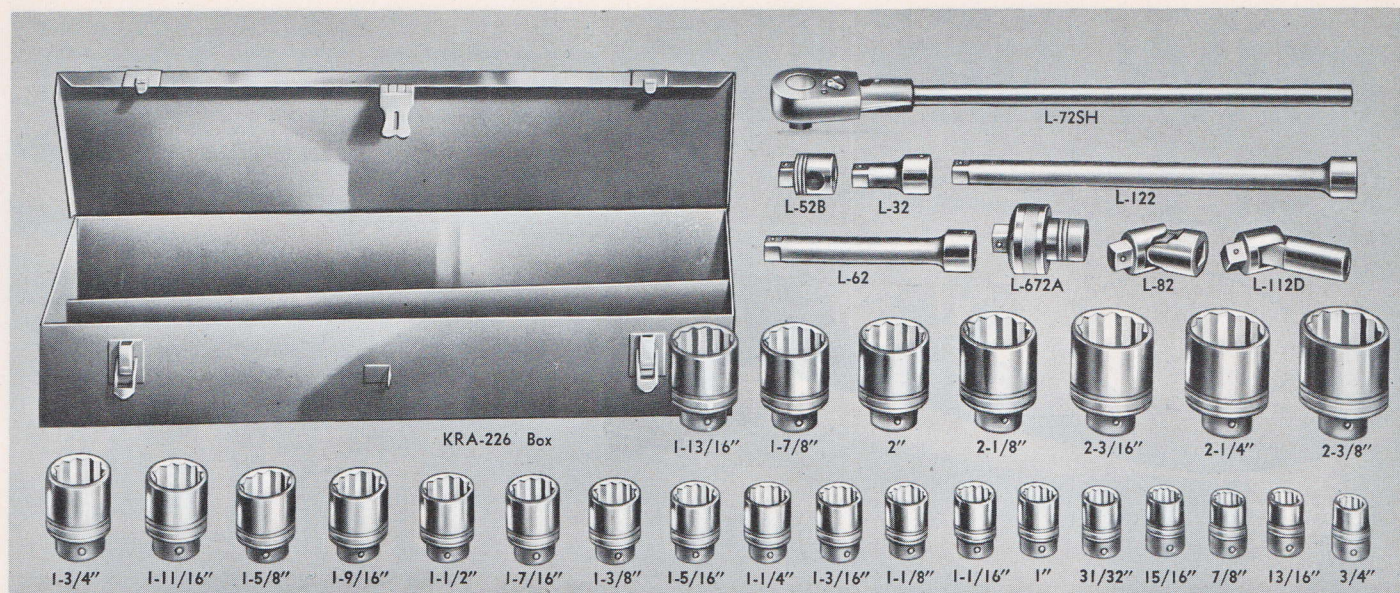
SCREW EXTRACTORS

No.	Screw Dia.	Use Drill	Lgth
★E-1	$\frac{1}{4}$ "	$\frac{1}{8}$ "	$\frac{25}{16}$ "
★E-2	$\frac{5}{16}$ "	$\frac{3}{16}$ "	$\frac{23}{16}$ "
★E-3	$\frac{3}{8}$ "	$\frac{1}{4}$ "	$\frac{31}{16}$ "
★E-4	$\frac{7}{16}$ "	$\frac{5}{16}$ "	$\frac{39}{16}$ "
★E-5	$\frac{1}{2}$ "	$\frac{11}{32}$ "	$\frac{33}{4}$ "

Each extractor has a special hexagon nut for convenient turning with a standard wrench.

FRACTIONAL DRILLS

Stock No. Size	Overall Length
★DBE- $\frac{1}{8}$ "	$\frac{23}{4}$ "
★DBE- $\frac{3}{16}$ "	$\frac{3}{2}$ "
★DBE- $\frac{1}{4}$ "	4"
★DBE- $\frac{5}{16}$ "	$\frac{41}{16}$ "
★DBE- $\frac{11}{32}$ "	$\frac{47}{8}$ "



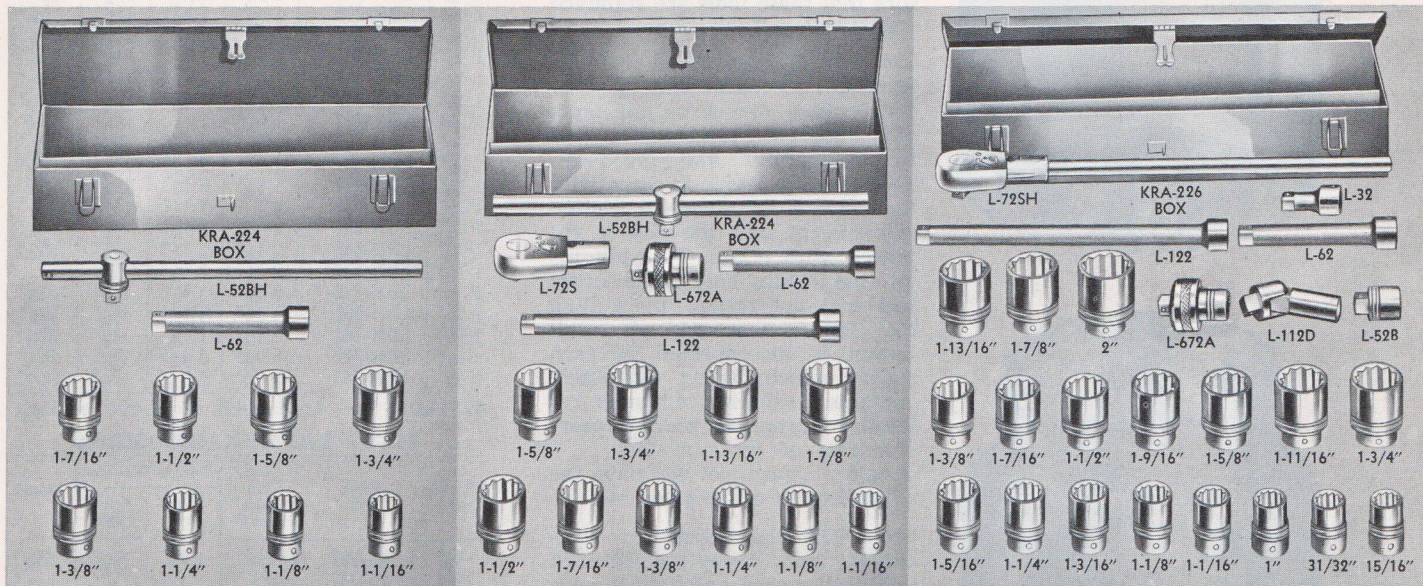
HEAVY DUTY GENERAL SET—33 TOOLS

433-HD-B Heavy Duty General Set. The right combination of tools means hours of time saved when machines and equipment are down for repair, and the proper selection of tools for production or maintenance work is a profitable investment. Equip your men to do faster, more efficient work with this complete set of heavy duty wrenches. This selection gives a "Loxocket" range of $\frac{7}{8}$ " to $2\frac{3}{4}$ " with hundreds of handle and socket combinations. Units are described on pages 34 and 35. Detachable ratchet handle fits sliding head and nut spinner head. Sturdy KRA-226 metal box measures $26\frac{3}{4}$ " x 9" x $3\frac{7}{8}$ ". Has trunk-type handle at each end, padlock hasp and two clasp fasteners.

433-HD General Set. Above set but tools only.

Contents of 433-HD-B Heavy Duty General Set

Stock No.	Description	Stock No.	Description
L-72SH	Ratchet (Complete)	LDH-402	$1\frac{3}{4}$ " Double Hexagon "Loxocket"
L-52B	Sliding Tee Head	LDH-422A	$1\frac{5}{8}$ " Double Hexagon "Loxocket"
L-112D	"Nut Spinner" Head	LDH-442	$1\frac{3}{8}$ " Double Hexagon "Loxocket"
L-672A	Ratchet Adaptor	LDH-462	$1\frac{7}{8}$ " Double Hexagon "Loxocket"
L-82	Universal Joint	LDH-482	$1\frac{1}{2}$ " Double Hexagon "Loxocket"
L-32	3" Extension	LDH-502	$1\frac{9}{16}$ " Double Hexagon "Loxocket"
L-62	8" Extension	LDH-522	$1\frac{5}{8}$ " Double Hexagon "Loxocket"
L-122	16" Extension	LDH-542	$1\frac{11}{16}$ " Double Hexagon "Loxocket"
LDH-242	$\frac{3}{4}$ " Double Hexagon "Loxocket"	LDH-562	$1\frac{3}{8}$ " Double Hexagon "Loxocket"
LDH-262	$\frac{13}{16}$ " Double Hexagon "Loxocket"	LDH-582	$1\frac{13}{16}$ " Double Hexagon "Loxocket"
LDH-282	$\frac{7}{8}$ " Double Hexagon "Loxocket"	LDH-602	$1\frac{1}{2}$ " Double Hexagon "Loxocket"
LDH-302	$\frac{15}{16}$ " Double Hexagon "Loxocket"	LDH-642	2" Double Hexagon "Loxocket"
LDH-312	$\frac{31}{32}$ " Double Hexagon "Loxocket"	LDH-682	$2\frac{1}{8}$ " Double Hexagon "Loxocket"
LDH-322	1" Double Hexagon "Loxocket"	LDH-702	$2\frac{1}{16}$ " Double Hexagon "Loxocket"
LDH-342	$1\frac{1}{16}$ " Double Hexagon "Loxocket"	LDH-722	$2\frac{3}{16}$ " Double Hexagon "Loxocket"
LDH-362	$1\frac{1}{8}$ " Double Hexagon "Loxocket"	LDH-762	$2\frac{3}{8}$ " Double Hexagon "Loxocket"
LDH-382	$1\frac{1}{4}$ " Double Hexagon "Loxocket"	KRA-226	Metal Box



H. D. BASIC SET—10 Tools

410-HD-B Heavy Duty Basic Set. Selected to provide maximum utility at minimum cost for the mechanic building up his tool equipment or who has only occasional need for these powerful wrenches. "Loxocket" sizes $1\frac{1}{16}$ " to $1\frac{3}{4}$ " handle most of heavier garage work. Set includes KRA-224 red enamel metal box, size $22\frac{5}{8}$ " x $8\frac{3}{8}$ " x $3\frac{1}{2}$ ".

Handles: L-52BH Sliding Bar and L-62 8" Extension.

Sockets: LDH-342, LDH-362, LDH-402, LDH-442, LDH-462, LDH-482, LDH-522, and LDH-562.

410-HD Set. Above set but tools only.

H. D. STANDARD SET—15 Tools

415-HD-B Heavy Duty Standard Set. Men working in fleet shops are enthusiastic about the power and safe operation provided by this set of Heavy Duty Units. The 10 "Loxockets" provide a size range of $1\frac{1}{16}$ " to $1\frac{7}{8}$ ", the sliding bar handle also fits the ratchet head. Red enameled KRA-224 metal box measures $22\frac{5}{8}$ " x $8\frac{3}{8}$ " x $3\frac{1}{2}$ ".

Handles: L-72S Ratchet Head, L-52BH Sliding Bar, L-672A Ratchet Adaptor L-62 8" Extension and L-122 16" Extension.

Sockets: LDH-342, LDH-362, LDH-402, LDH-442, LDH-462, LDH-482, LDH-522, LDH-562, LDH-582, LDH-602.

415-HD Set. Above set but tools only.

HEAVY DUTY UTILITY SET—25 Tools

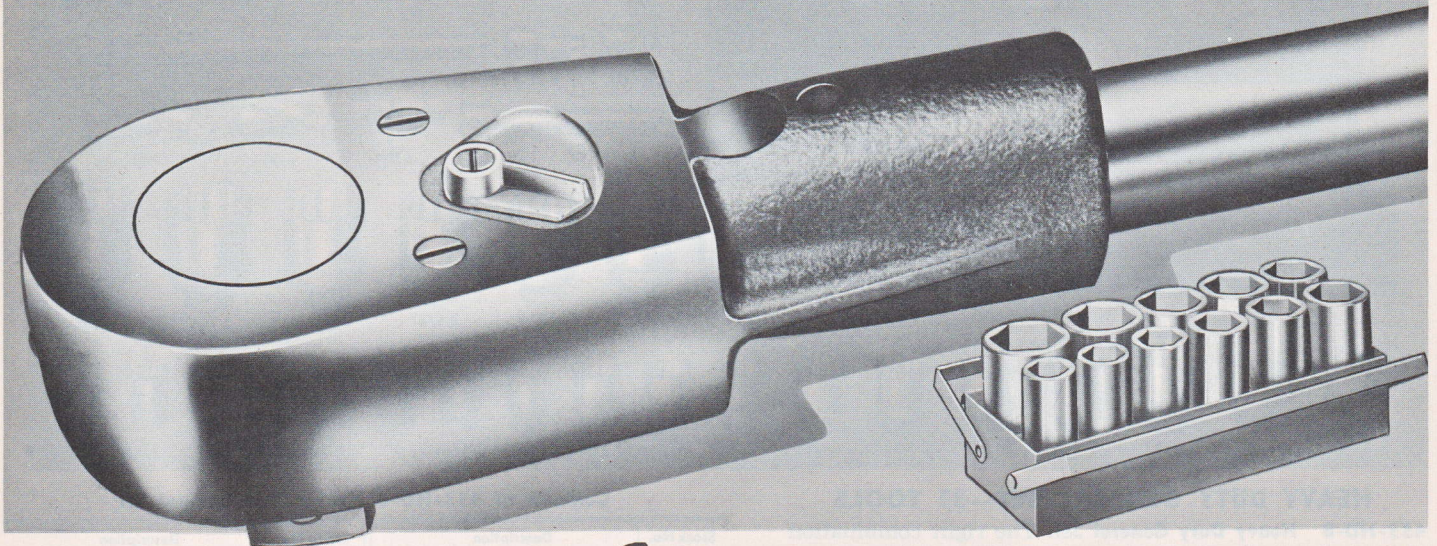
425-HD-B Heavy Duty Utility Set. A practical selection of wrenches for factory and building maintenance, medium diesel and stationary engine assembly and service, fleet shops, etc. Detachable handle fits ratchet, nut-spinner and sliding head, 18 "Loxockets" provide sizes $1\frac{1}{16}$ " to 2". Red enameled metal box KRA-226 measures $26\frac{3}{4}$ " x 9" x $3\frac{7}{8}$ ".

Handles: L-72SH Ratchet, L-52B Sliding Head, L-672A Ratchet Adaptor, L-112D Nut Spinner Head, Ext. Bars, L-32, L-62, L-122.

Sockets: LDH-302, LDH-312, LDH-322, LDH-342, LDH-362, LDH-382, LDH-402, LDH-422-A, LDH-442, LDH-462, LDH-482, LDH-502, LDH-522, LDH-542, LDH-562, LDH-582, LDH-602, and LDH-642

425-HD Sets. Above set but tools only.

HEAVY DUTY LOXOCKETS FOR TOUGH



Snap-on H.D. "LOXOCKETS"— $\frac{3}{4}$ " Square Drive

▲ STANDARD DOUBLE HEX SERIES

Wrench Size	Stock No.	Bolt Clearance Depth	Outside Diameter		Length
			Socket End	Drive End	
$\frac{3}{4}$ "	LDH-242	1 $\frac{1}{4}$ "	1 $\frac{1}{8}$ "	1 $\frac{7}{16}$ "	2"
$\frac{13}{16}$ "	LDH-262	1 $\frac{1}{4}$ "	1 $\frac{7}{32}$ "	1 $\frac{7}{16}$ "	2"
$\frac{7}{8}$ "	LDH-282	1 $\frac{1}{4}$ "	1 $\frac{5}{16}$ "	1 $\frac{7}{16}$ "	2"
$\frac{15}{16}$ "	LDH-302	1 $\frac{1}{4}$ "	1 $\frac{3}{8}$ "	1 $\frac{7}{16}$ "	2"
$\frac{31}{32}$ "	LDH-312	1 $\frac{1}{4}$ "	1 $\frac{13}{32}$ "	1 $\frac{7}{16}$ "	2"
1"	LDH-322	1 $\frac{5}{16}$ "	1 $\frac{29}{64}$ "	1 $\frac{1}{2}$ "	2 $\frac{1}{16}$ "
1 $\frac{1}{16}$ "	LDH-342	1 $\frac{5}{8}$ "	1 $\frac{9}{16}$ "	1 $\frac{1}{2}$ "	2 $\frac{1}{8}$ "
1 $\frac{1}{8}$ "	LDH-362	1 $\frac{7}{8}$ "	1 $\frac{5}{8}$ "	1 $\frac{1}{2}$ "	2 $\frac{3}{16}$ "
1 $\frac{3}{16}$ "	LDH-382	1 $\frac{1}{2}$ "	1 $\frac{11}{16}$ "	1 $\frac{1}{2}$ "	2 $\frac{1}{4}$ "
1 $\frac{1}{4}$ "	LDH-402	1 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "	1 $\frac{1}{2}$ "	2 $\frac{1}{4}$ "
1 $\frac{5}{16}$ "	LDH-422A	1 $\frac{9}{16}$ "	1 $\frac{7}{8}$ "	1 $\frac{5}{8}$ "	2 $\frac{5}{16}$ "
1 $\frac{3}{8}$ "	LDH-442	1 $\frac{9}{16}$ "	1 $\frac{15}{16}$ "	1 $\frac{5}{8}$ "	2 $\frac{5}{16}$ "
1 $\frac{7}{16}$ "	LDH-462	1 $\frac{5}{8}$ "	2"	1 $\frac{5}{8}$ "	2 $\frac{3}{8}$ "
1 $\frac{1}{2}$ "	LDH-482	1 $\frac{11}{16}$ "	2 $\frac{1}{8}$ "	1 $\frac{5}{8}$ "	2 $\frac{1}{2}$ "
1 $\frac{9}{16}$ "	LDH-502	1 $\frac{7}{8}$ "	2 $\frac{3}{16}$ "	1 $\frac{3}{4}$ "	2 $\frac{5}{8}$ "
1 $\frac{5}{8}$ "	LDH-522	1 $\frac{7}{8}$ "	2 $\frac{1}{4}$ "	1 $\frac{3}{4}$ "	2 $\frac{5}{8}$ "
1 $\frac{11}{16}$ "	LDH-542	2"	2 $\frac{3}{8}$ "	1 $\frac{3}{4}$ "	2 $\frac{3}{4}$ "
1 $\frac{3}{4}$ "	LDH-562	2"	2 $\frac{7}{16}$ "	1 $\frac{3}{4}$ "	2 $\frac{3}{4}$ "
1 $\frac{13}{16}$ "	LDH-582	2 $\frac{1}{8}$ "	2 $\frac{1}{2}$ "	1 $\frac{3}{4}$ "	2 $\frac{7}{8}$ "
1 $\frac{7}{8}$ "	LDH-602	2 $\frac{1}{4}$ "	2 $\frac{9}{16}$ "	1 $\frac{3}{4}$ "	3"
2"	LDH-642	2 $\frac{3}{8}$ "	2 $\frac{3}{4}$ "	1 $\frac{3}{4}$ "	3 $\frac{1}{8}$ "
2 $\frac{1}{8}$ "	LDH-682	2 $\frac{1}{2}$ "	2 $\frac{15}{16}$ "	1 $\frac{3}{4}$ "	3 $\frac{1}{4}$ "
2 $\frac{3}{16}$ "	LDH-702	2 $\frac{1}{2}$ "	2 $\frac{15}{16}$ "	1 $\frac{3}{4}$ "	3 $\frac{1}{4}$ "
2 $\frac{1}{4}$ "	LDH-722	2 $\frac{5}{8}$ "	3 $\frac{1}{8}$ "	1 $\frac{3}{4}$ "	3 $\frac{3}{8}$ "
2 $\frac{3}{8}$ "	LDH-762	2 $\frac{7}{8}$ "	3 $\frac{1}{4}$ "	1 $\frac{3}{4}$ "	3 $\frac{5}{8}$ "

425-LDH Set. One each of above sockets.

EXTRA DEEP HEXAGON SERIES

Wrench Size	Stock No.	Bolt Clearance Depth	Outside Diameter		Length
			Socket End	Drive End	
$\frac{7}{8}$ "	LS-282	2 $\frac{3}{4}$ "	1 $\frac{5}{16}$ "	1 $\frac{7}{16}$ "	3 $\frac{1}{2}$ "
$\frac{15}{16}$ "	LS-302	2 $\frac{3}{4}$ "	1 $\frac{3}{8}$ "	1 $\frac{7}{16}$ "	3 $\frac{1}{2}$ "
1"	LS-322	2 $\frac{3}{4}$ "	1 $\frac{29}{64}$ "	1 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "
1 $\frac{1}{16}$ "	LS-342	2 $\frac{3}{4}$ "	1 $\frac{9}{16}$ "	1 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "
1 $\frac{1}{8}$ "	LS-362	2 $\frac{3}{4}$ "	1 $\frac{5}{8}$ "	1 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "
1 $\frac{1}{4}$ "	LS-402	2 $\frac{3}{4}$ "	1 $\frac{3}{4}$ "	1 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "
1 $\frac{5}{16}$ "	LS-422A	2 $\frac{3}{4}$ "	1 $\frac{7}{8}$ "	1 $\frac{1}{2}$ "	3 $\frac{1}{2}$ "
1 $\frac{3}{8}$ "	LS-442	2 $\frac{3}{4}$ "	1 $\frac{15}{16}$ "	1 $\frac{5}{8}$ "	3 $\frac{1}{2}$ "
1 $\frac{1}{2}$ "	LS-462	2 $\frac{3}{4}$ "	2"	1 $\frac{5}{8}$ "	3 $\frac{1}{2}$ "
1 $\frac{1}{2}$ "	LS-482	2 $\frac{3}{4}$ "	2 $\frac{1}{8}$ "	1 $\frac{5}{8}$ "	3 $\frac{1}{2}$ "
1 $\frac{5}{8}$ "	LS-522	2 $\frac{3}{4}$ "	2 $\frac{1}{4}$ "	1 $\frac{3}{4}$ "	3 $\frac{1}{2}$ "

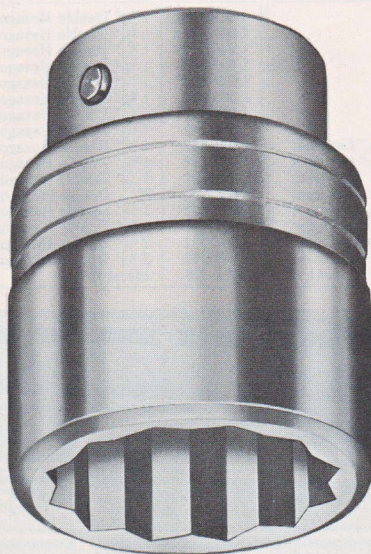
411-LS Set. One each of above sockets.

HEAVY DUTY EXTRA DEEP HEX SETS

411-LS-T Set, consisting of 11 sockets, one each of LS-282 through LS-522 above in KTA-244 Metal Tray.

411-LS Set. Same as above but without metal tray.

KTA-244 Metal Tray. Partitioned to hold two rows of sockets. 10 $\frac{5}{16}$ " long, 2 $\frac{1}{32}$ " high and 3 $\frac{1}{16}$ " wide. Tray has lip for hanging on edge of tool box. Has a grill-work bottom so tray and sockets can be easily cleaned in tank of solvent.

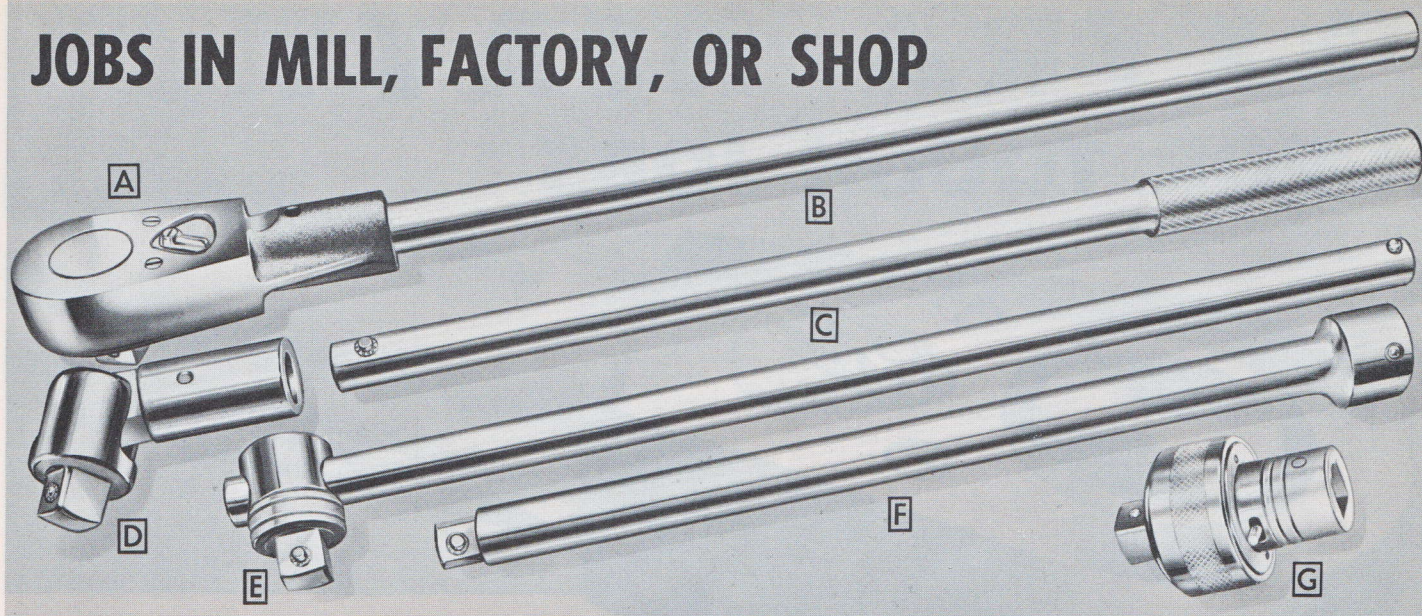


When a tough nut ties up your shop, minutes lost add up to dollars lost . . . you lose money every minute any machine is laid up for repairs or servicing. The trick is to get them OUT . . . quick. It's no trick at all when mechanics are equipped with SNAP-ON Heavy Duty "Loxocket" Wrenches . . . that's why so many Managers and Superintendents make sure that these tools are standard equipment in their shops.

Not only do they speed up your work but on top of that the special locking device on all units puts "Safety" into the hands of every operator and mechanic. This locking device is essentially the same as the standard friction grip except that the ball is replaced with a pin. This pin fits into the locking hole in the socket and will not release by pulling like the friction grip. A small button is incorporated in each socket which, when depressed, contacts the pin in the handle, releasing it from the socket. Interchanging of units is fast . . . simple . . . easy, yet you have the advantage of a one piece tool.

SNAP-ON "Loxockets" are machined from exceptionally high quality bar steel and held to very close tolerances. Hot broaching gives smooth, accurate openings and with no rough edges or chips at the bottom to collect dirt etc. Careful heat-treating of the "Loxocket" assures the utmost in strength with the exceptional toughness necessary for all heavy duty operations.

JOBS IN MILL, FACTORY, OR SHOP



Snap-on HEAVY DUTY "LOXOCKET" HANDLES — 3/4" Square Drive

RATCHET AND DETACHABLE HANDLE

A and B L-72SH Heavy Duty Ratchet. A combination of the L-72S Ratchet Head and L-72H Handle. Powerful leverage to turn those larger nuts and bolts. Efficient, smooth working, reversible ratcheting action speeds your work. Rugged construction to stand heavy duty work of all kinds.

The design and construction of this tool make it the most outstanding 3/4" drive heavy duty ratchet we have ever offered the trade. The detachable handle, locks on to the ratchet head and will not come off until the locking button is released. Overall length, 24".

▲ **A L-72S Ratchet Head only.** Length 6", head thickness 1 1/8". Can be used on either L-72H standard handle or L-72J knurled grip handle.

▲ **A and C L-72SJ Heavy Duty Ratchet.** Combination of the L-72S Ratchet Head and the L-72RJ Handle.

RATCHET ADAPTOR

C L-672A Ratchet Adaptor. Converts any combination of handle, extension and socket into a 44 tooth, reverse action ratcheting tool to help cut time and labor on many jobs. Outside diameter 2 1/2", 4" long.

WRENCH HANDLES

These wrench handles are made of solid high carbon alloy steel with one end fitted with a locking button for securely attaching to the Ratchet Head, or Nut Spinner Head. Heads cannot be detached accidentally but are easily released when you desire. Handle diameter is 13/16" and length 20".

B L-72H Handle. Used with L-72S, L-112D and L-52B Wrench heads.

C L-72RJ Handle. This handle is preferred by some because its knurled grip provides a firm, sure hand hold.

"NUT SPINNER"

B and D L-112DH Heavy Duty "Nut Spinner." Complete with the L-72H handle and L-112D nut spinner. A heavy duty unit that offers the advantages of a "Nut Spinner" handle, an offset handle and an angle head handle all in one. The detachable handle can also be used on the Ratchet Head and Sliding Head, giving a maximum tool efficiency at a minimum cost. The entire unit is built to take those tough jobs which require extra powerful leverage to break loose those large rusted-on nuts and bolts. 21 1/2" long.

D L-112D "Nut Spinner" Head only. Head diameter 1 1/8", depth 2 5/16". Use on either of the handles listed above.

C and D L-112DJ Heavy Duty Nut Spinner. Combination of the L-112D Nut Spinner Head and the L-72RJ Handle.

SLIDING BAR

▲ **E L-52BH Heavy Duty Sliding Bar.** Complete with the L-72H handle and L-52B sliding head. Three tools in one—a combination sliding bar handle and offset handle, which the attachment of an extension bar converts to a "T" handle. The head can be purchased separately if you already have the bar handle. A spring and ball device holds the head at any point on the handle. Overall length, 20".

L-52B Sliding Head only. Depth 2 5/16". Can be used on either of the handles listed at left.

EXTENSION BARS

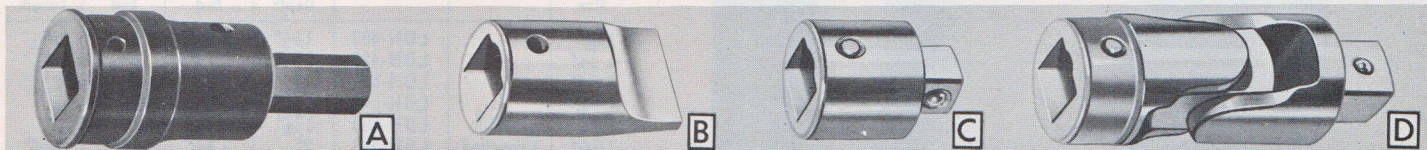
▲ **F Heavy Duty Extension Bars.** Give you the extra reach you need on so many jobs and are probably used on more operations than any other wrench attachment. Used in conjunction with the sliding bar, they convert it for use as a "T" handle. Shank diameter is 1 5/16".

L-122 Extension Bar 16 inches long

L-62 Extension Bar 8 inches long

L-42 Extension Bar 5 inches long.

L-32 Extension Bar 3 inches long.



A HEX HEAD WRENCHES

For use with 3/4" square drive handles. Two-piece construction permits better heat treatment of parts for maximum service. Black finish. See Index pages for listing of other hex head wrenches.

★ **LAW-118A** 1/8" Hex Head Wrench.

★ **SA-18-A-2**.....Extra 1/16" bit.

★ **ESD-311**.....Roll-Pin for above.

★ **LAW-120A** 5/16" Hex Head Wrench.

★ **LAW-120A-2**.....Extra 5/16" bit.

★ **ESD-306**.....Roll-Pin for above.

★ **LAW-124A** 3/4" Hex Head Wrench.

★ **LAW-124A-2**.....Extra 3/4" bit.

★ **ESD-309**.....Roll-Pin for above.

B DRAG LINK ADJUSTER

LD-138 Drag Link Adjuster. This heavy duty unit has been made especially for drag link adjusting work on trucks and buses. The short, tapered blade will take the punishment necessary for work of this type. "Loxocket" release button permits fast, easy removal. Overall length of the unit is 2 3/16", outside diameter 1 3/8", tip size 1 3/4" x 1 3/8". Chrome finish.

C HANDLE AND SOCKET ADAPTORS

These adaptors allow you to interchange your Heavy Duty (3/4" square drive) wrenches with Master (1/2" square drive), old style Heavy Duty (5/8" square drive), and Extra Heavy Duty (1" square drive) units. Chrome plated finish.

★ **LA-12 Adaptor**.....1/2" drive to 3/4"

★ **LA-62 Adaptor**.....3/4" drive to 1/2"

★ **LA-52 Adaptor**.....3/4" drive to 5/8"

★ **LA-32 Adaptor**.....5/8" drive to 3/4"

★ **LA-72 Adaptor**.....3/4" drive to 1"

★ **LA-124 Adaptor**.....1" drive to 3/4"

D UNIVERSAL JOINT

L-82 Heavy Duty Universal Joint. Whenever you must reach in at an angle after a nut, you need the working convenience of a universal joint. This tool worms in and gets those around-the-corner and under-obstruction nuts and bolts.

Machined from finest alloy steel—heat treated and tempered for maximum service under toughest working conditions. Chrome finish. Outside diameter is 1 1/16", overall length 3 1/16".

EXTRA HEAVY FOR TOUGH JOBS

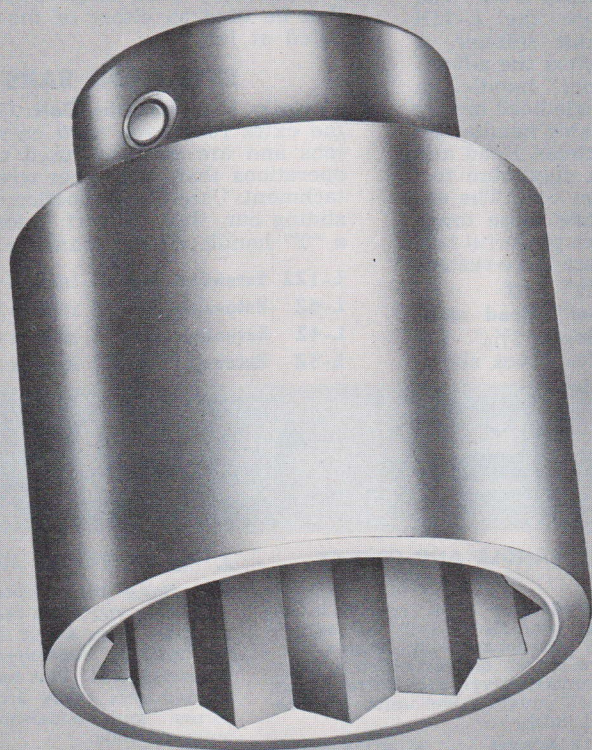


Snap-on EXTRA HEAVY DUTY LOXOCKET WRENCHES 1" Square Drive

The "Loxocket" principle makes any combination of these units as safe as a one-piece wrench . . . they lock together securely and will not accidentally come apart . . . a convenient release button allows you to interchange sockets swiftly and easily. Here are tools with the compact power of a prize-fighter's fist . . . with tremendous power and leverage to accomplish more work easier and with less fatigue . . . built to break loose those big rusted-on nuts and bolts or to pull them up to the tightest degree. We recommend this equipment for speeding up the heaviest nut-turning work in truck or bus shops—installation and maintenance on marine and mine machinery—all power plants and transmitting machinery—locomotive shops, etc. Take the worry out of break-downs by using SNAP-ON wrenches. Pitch into every repair job with confidence that it will be finished at a definite time . . . and in the shortest time. Units are individually machined from finest alloy steel and are carefully heat-treated for maximum strength.

EXTRA HEAVY DUTY HEXAGON "LOXOCKETS"

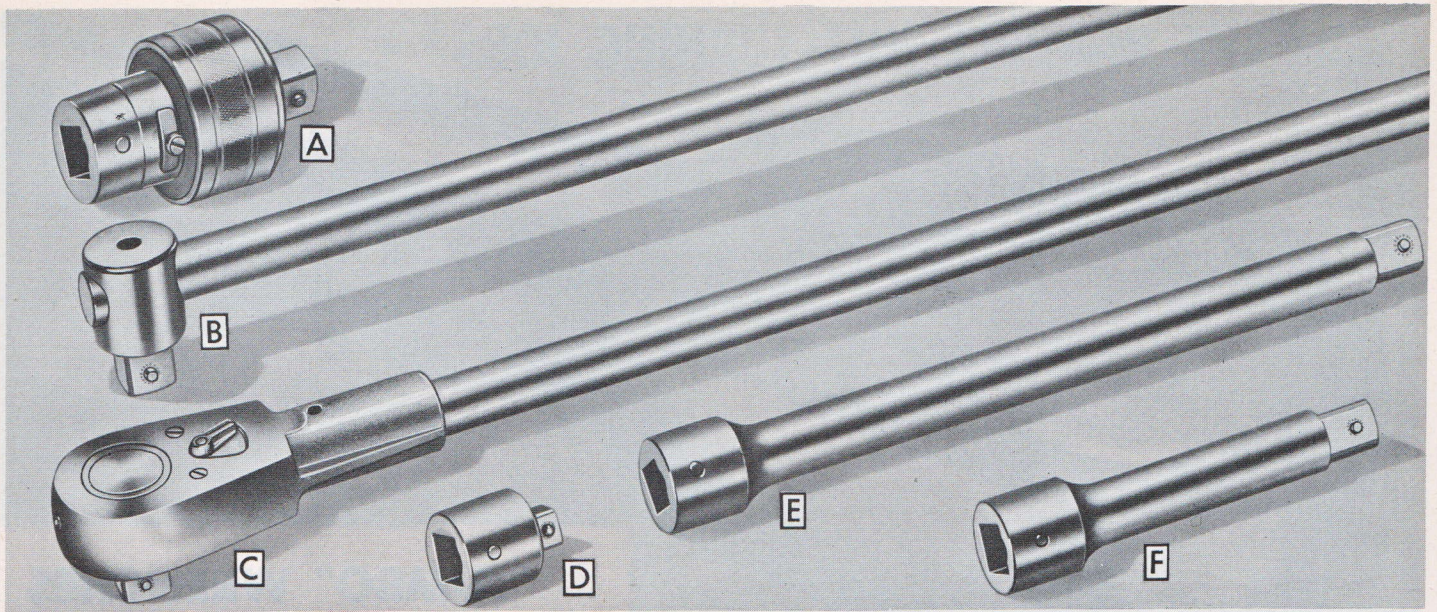
Fit companions to the Extra Heavy Duty Handles are the "Loxockets" that work with them . . . 11 double broached and 6 single broached sockets of precision machined alloy steel, ranging in size from 1 7/16" to 3 7/8". Keep going with these tools that make small work of the big tie-ups—give you adequate wrench performance at all times.



Wrench Size		Stock No.	Bolt Clearance Depth	O.D. Socket End	O.D. Drive End	Overall Length
1 7/16"	Double Broached	LDH-463	1 1/2"	2 3/16"	2"	25 5/8"
1 1/2"		LDH-483	1 5/8"	2 1/4"	2"	23 3/4"
1 5/8"		LDH-523	1 3/4"	2 3/8"	2"	27 7/8"
1 11/16"		LDH-543	1 7/8"	2 1/2"	2"	3"
1 3/4"		LDH-563	1 7/8"	2 5/16"	2"	3"
1 13/16"		LDH-583	2"	2 5/8"	2 1/8"	31 3/8"
1 7/8"		LDH-603	2 1/8"	2 3/4"	2 1/8"	31 1/4"
2"		LDH-643	2 1/4"	2 15/16"	2 1/8"	33 3/8"
2 1/8"		LDH-683	2 3/8"	3 1/8"	2 1/4"	31 1/2"
2 3/16"		LDH-703	2 5/8"	3 1/8"	2 1/4"	35 3/8"
2 1/4"		LDH-723	2 5/8"	3 1/4"	2 1/4"	33 3/4"
2 3/8"	Single Broached	L-763	2 3/4"	3 3/8"	2 1/4"	37 7/8"
2 1/2"		L-803	3"	3 1/2"	2 1/4"	41 3/8"
2 5/8"		L-843	3 1/8"	3 21/32"	2 1/4"	41 1/4"
2 3/4"		L-883	3 3/8"	3 13/16"	2 1/4"	41 1/2"
2 15/16"		L-943	3 3/4"	4 1/16"	2 3/8"	47 7/8"
3 1/8"		L-1003	3 7/8"	4 9/32"	2 3/8"	5"

Larger Sizes Available on Special Order.

517-LDH Set. Consists of one each of above sockets.



***Snap-on* EXTRA HEAVY DUTY "LOXOCKET" HANDLES (1" Square Drive)**

▲ **A L-673 Ratchet Adaptor.** Here is a new addition to SNAP-ON's Extra Heavy Duty series that will prove a real time-saver. It converts any combination of handle, extension and socket into a 44 tooth, reverse action ratcheting tool and will make your present set twice as useful. Outside diameter $3\frac{1}{4}$ ", overall length 5".

▲ **B L-53 Extra Heavy Duty Sliding Bar.** Thirty full inches of tremendous leverage when this tool is used as an Offset Handle. The head can be used in any position on the bar or as a tee wrench in combination with extension bars. Handle is same as used on L-73 Ratchet.

L-53A Sliding Bar Head only. $3\frac{1}{16}$ " deep.

▲ **C L-73 Ratchet and Detachable Handle.** Rugged strength, tremendous leverage, and high speed ratchet action combine to chase away the nightmare of costly delays and shutdowns.

This tool is recommended without hesitation for the toughest kind of work. The detachable hammer forged head and all working parts are accurately machined from special alloy steels, heat treated to give the utmost strength and durability. Hardened bearings in the head provide resistance to wear. Ratchet action requires only a 20° handle movement. Overall length 35".

L-73A Ratchet Head only, $7\frac{1}{16}$ " long, $1\frac{1}{16}$ " thick

L-53H Handle only, 30" long, $1\frac{1}{8}$ " dia.

▲ **D Handle and Socket Adaptors.** These two adaptors enable you to interchange your Extra Heavy Duty units (1" square drive) with Heavy Duty ($\frac{3}{4}$ " square drive) units.

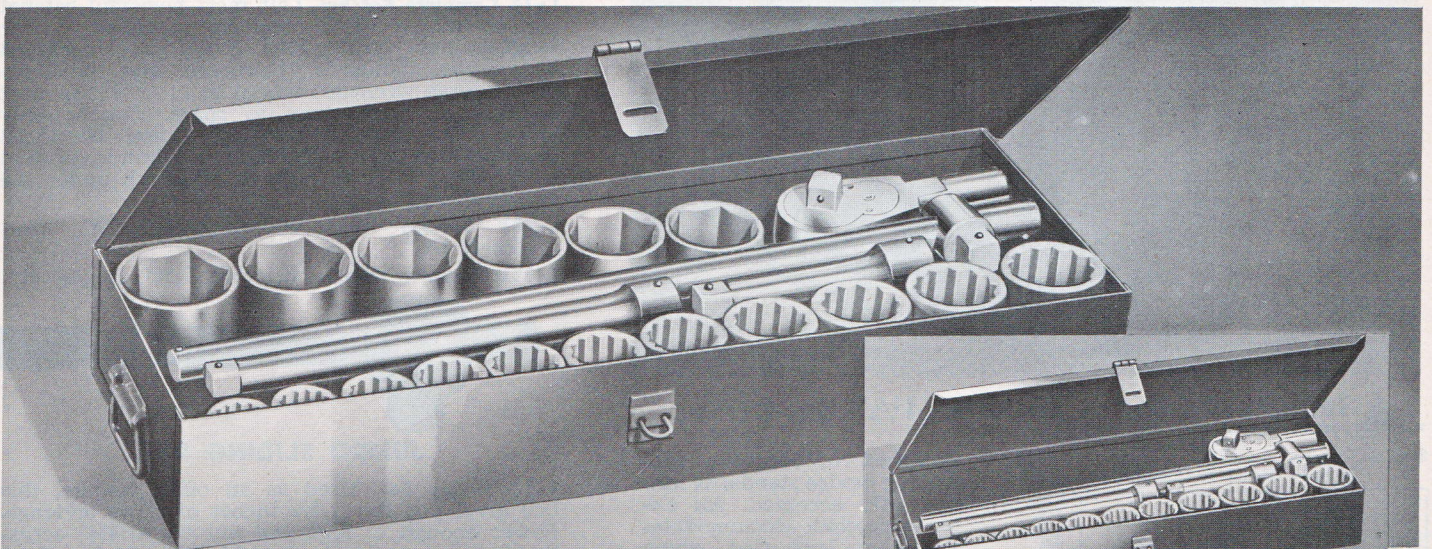
▲ **★LA-72 Adaptor.** $\frac{3}{4}$ " drive female end—1" drive male end.

▲ **★LA-124 Adaptor.** 1" drive female end— $\frac{3}{4}$ " drive male end.

Extra Heavy Duty Extension Bars. These extensions give you the valuable adaptability of the Ratchet or Sliding Bar to nuts or bolts down in deep holes or crevices where other tools will not reach, or where obstructions interfere.

▲ **E L-123 Extension Bar** 16" long.

▲ **F L-63 Extension Bar** 8" long.



EXTRA HEAVY DUTY STANDARD SET — 21 Tools

521-EHD-B Extra Heavy Duty Standard Set. Includes all 17 Hexagon "Loxockets" listed on opposite page and provides a wrench range of $1\frac{1}{16}$ " up to and including $3\frac{1}{8}$ ". Also L-73A Ratchet Head, Sliding Bar L-53 and two Extension Bars L-63 and L-123. All neatly packed in a sturdy metal box KRA-238—made of heavy gauge steel—closely spot welded for durability and strength. Lid is fitted with four butt hinges and a strong padlock hasp. Has heavy carrying handles on each end. Finished in baked-on red enamel. Size $31\frac{1}{2}$ " long, $11\frac{1}{4}$ " wide and $5\frac{1}{4}$ " deep.

521-EHD Set. Same set as above but tools only.

E. H. D. Basic Set — 15 Tools

515-EHD-B Extra Heavy Duty Basic Set. Included are 11 powerful Hexagon "Loxockets" LDH-463, 483, 523, 543, 563, 583, 603, 643, 683, 703, and 723; the L-73A Ratchet Head, a 30" Sliding Bar L-53 and two extension bars L-63 and L-123. This set, with wrench sizes of $1\frac{1}{16}$ " to $2\frac{1}{4}$ " will handle a wide range of big nut turning jobs. Set also includes KRA-238 Metal Box described at left.

515-EHD Set. Above set. Tools only.

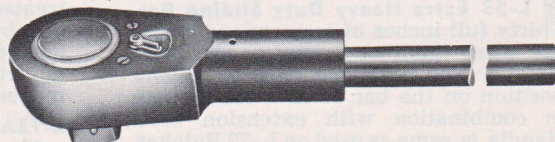
FOR THE HARDEST NUT TURNING JOBS



"JUMBO" WRENCHES

(1 1/2" Square Drive)

Here's wrench efficiency for your biggest jobs . . . nut-to-nut speed that makes short work of big tie-ups. Here are tools that give the maximum safety factor. Sockets lock securely on the handles and cannot pull off by accident . . . takes only a moment to release them and interchange the units. The high quality of material and workmanship of SNAP-ON wrenches is beyond comparison, and these, the largest of SNAP-ON's standard wrenches, are built to out-perform any other similar type of wrench.



JUMBO RATCHET WRENCH

L-78 Complete Ratchet. Our most powerful ratchet . . . 42 inches of tremendous leverage . . . for toughest nut turning jobs. Every part machined to precision standards. It squeezes into places ordinary large wrenches cannot go . . . it clears most obstructions with room to spare. Conveniently placed lever instantly reverses action. Hardened bearings inserted into the housing minimize normal wear. Every part is made to stand up under the toughest kind of use.

L-78Y Ratchet Head. Head diameter 4", head thickness 1 3/4".

L-55B Handle. Handle diameter 1 3/8", length 36".



JUMBO SLIDING BAR

L-55 Sliding Bar. Used as an offset handle, this tool gives you thirty-six inches of brute leverage. Power enough to turn any nut up to 4 5/8" across the flats no matter how tight it might be. Head depth 2 1/2", handle diameter 1 3/8". Includes the bar handle L-55B listed above.

L-55A Sliding Head only.



JUMBO EXTENSION BARS

Reach down with an extension bar to get those inaccessible nuts. Converts your sliding bar into a tee handle. Built to take the heaviest work.

L-105 Extension Bar. 10" long, 1 15/16" shank dia.
L-205 Extension Bar. 20" long, 1 15/16" shank dia.

▲ Industrial Impact Sockets (1 1/2" Sq. Drive)

Stock No.	Wrench Size	Outside Diameter		Overall Length
		Handle End	Socket End	
IM-525	1 5/8"	3 1/4"	3"	3 1/4"
IM-545	1 11/16"	3 1/4"	3"	3 1/4"
IM-565	1 3/4"	3 1/4"	3"	3 1/4"
IM-585	1 15/16"	3 1/4"	3 1/8"	3 3/8"
IM-605	1 7/8"	3 1/4"	3 1/8"	3 3/8"
IM-625A	1 15/16"	3 1/4"	3 1/4"	3 1/2"
IM-645	2"	3 1/4"	3 1/4"	3 1/2"
IM-685	2 1/8"	3 1/4"	3 1/2"	3 5/8"
IM-705	2 1/16"	3 1/4"	3 1/2"	3 3/4"
IM-725A	2 1/4"	3 1/4"	3 3/8"	3 3/4"
IM-765	2 3/8"	3 1/4"	3 7/8"	3 7/8"
IM-805	2 1/2"	3 1/4"	3 7/8"	4"
IM-825	2 5/8"	3 1/4"	4"	4"
IM-845	2 3/4"	3 1/4"	4 1/8"	4 1/8"
IM-885	2 7/8"	3 1/4"	4 1/4"	4 1/4"
IM-905	2 15/16"	3 1/4"	4 3/8"	4 1/4"
IM-945	2 11/16"	3 1/4"	4 1/2"	4 3/8"
IM-965	3"	3 1/4"	4 3/8"	4 1/2"
IM-1005	3 1/8"	3 1/4"	4 3/4"	4 5/8"
IM-1045	3 1/4"	3 1/4"	5"	4 5/8"
IM-1125	3 1/2"	3 1/4"	5 1/8"	5"
IM-1245	3 7/8"	3 1/4"	5 5/8"	5 3/8"
IM-1485	4 5/8"	3 1/4"	6 1/2"	6"

Designed to conform with locking device standards now generally accepted. An exterior channel accommodates a rubber lock ring which secures the lock pin used when the sockets are attached to power impact wrenches. Lock rings and pins are not required when used with the handles listed on this page. Sizes in greatest demand are listed here. Additional sizes are listed in our Industrial Catalog.

IM-445P Locking Pin.

IM-445R Synthetic Rubber Locking Ring.

Snap-on

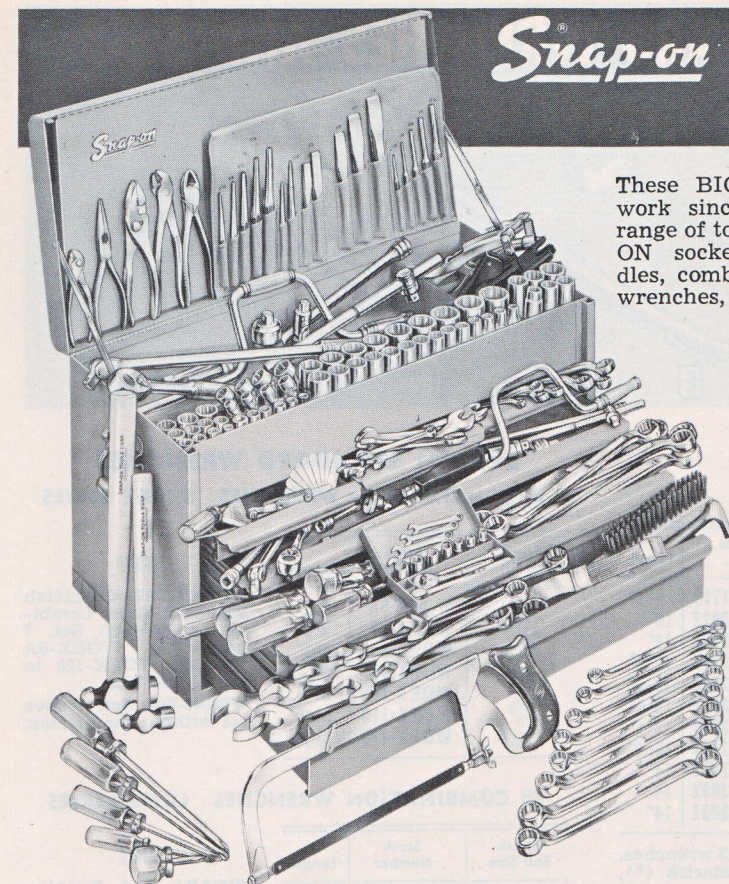
COMPLETE TOOL SETS FOR USE ON BRITISH AND EUROPEAN CARS

These BIG tool sets help speed work since they contain a wide range of tools. Included are SNAP-ON socket wrenches and handles, combination and "Boxocket" wrenches, pliers, screwdrivers,

valve tools, hammers, chisels and punches. Housed in the famous KRA-56 metal tool chest with 6 drawers and lock so your tools are protected. The ideal tool sets for many kinds of work.

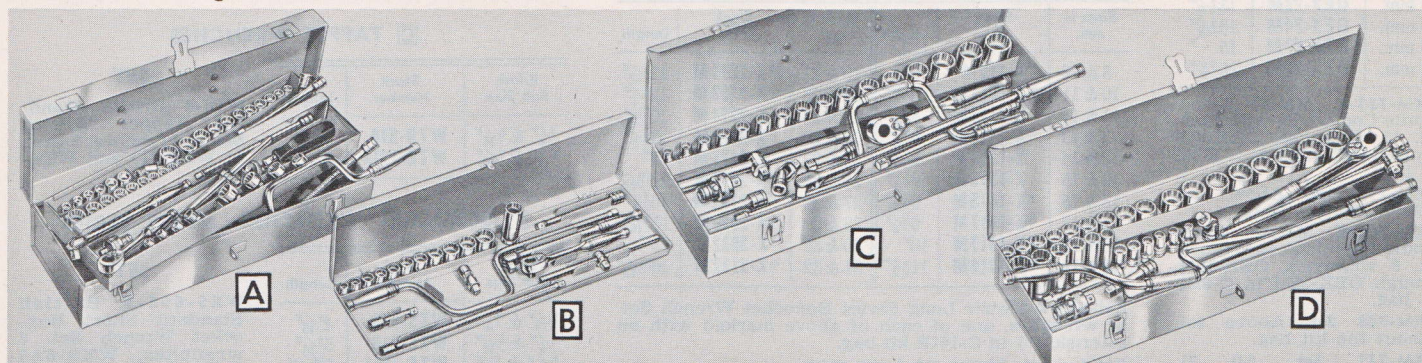
Contents of 5193-GM-B Set and 5135-GW-B Set

Set or Tool Description	METRIC 5193-GM-B SET	BRITISH STD. 5135-GW-B SET
Midget Socket Wrenches	114-MTM-B Set	108-WTM-B Set
Ferret Socket Wrenches	248-MF Set	228-FW Set
Master Socket Wrenches	338-MM Set	321-MW Set
Combination Wrenches	OEXM-721 Set	WOEXS-707 Set
Open End Wrenches		VS-809 Set
Long Boxocket Wrenches	XM-614 Set	
Dwarf Boxocket Wrenches	XSM-608 Set	WX-606 Set
Tappet Wrenches		WTB-4 Set
Ignition Wrenches		WC-43 Wrench
Ignition Wrenches		WC-65 Wrench
Punches and Chisels	PC-170-K Set	PC-170-K Set
Phillips Screw Drivers	RGP-50 Set	RGP-50 Set
Standard Screw Drivers	RGS-70 Set	RGS-70 Set
Spark Test Screw Driver	SD-145	SD-145
Screw Starter	GA-12	GA-12
4 oz. Ball Peen Hammer	BP-4	BP-4
12 oz. Ball Peen Hammer	BP-12	BP-12
Hack Saw Frame	HS-8	HS-8
Wire Brush	AC-58B	AC-58B
5" Gripping Plier	No. 50	No. 50
7 1/2" Gripping Plier	No. 47	No. 47
7" Needle Nose Plier	No. 196	No. 196
7 1/4" Diagonal Cutter	No. 87	No. 87
7 3/4" Battery Plier	No. 208A	No. 208A
Valve Lifter	CF-49A	CF-49A
Valve Key Replacer	CF-7B	CF-7B
Valve Spring Compressor	VL-30	VL-30
Carbon Scraper	CS-1	CS-1
16" Pry Bar	No. 1650	No. 1650
Spark Plug Gap Gauge	FB-309W	FB-309W
Feeler Gauge	FB-326	FB-326
Ignition Point File	HB-5	HB-5
Spark Plug Socket	S-9704B	S-9704B
Tool Chest	KRA-56	KRA-56
Cotter Pin Puller	CP-6A	CP-6A



5193-GM-B Metric Series Service Tool Set consisting of 193 tools as listed to right in KRA-56 Metal Chest.

5135-GW-B British Standard Service Tool Set consisting of 135 tools as listed to right in KRA-56 Metal Chest.



A HIGH QUALITY Snap-on TOOL SET FOR EVERY SIZE JOB

MIDGET - 1/4" SQUARE DRIVE SETS

114-MTM-B Metric Midget Set. Includes TM-70A Ratchet, TM-10F Nut Spinner, TMX-4 Ext. Bar, 111-MTM Socket Set and KRA-222A Box.

108-WTM-B Metric British Standard Set. Includes TM-70A Ratchet, TM-10F Nut Spinner, TMX-4 Ext. Bar, 105-WTM Socket Set, KRA-222A Box.

48-PIECE METRIC FERRET SET

[A] 248-MF-B Metric Ferret (3/8" Drive) Set. Includes: F-71D Ratchet, F-67B Ratchet Adaptor, FRS-70 Ratchet Spinner, F-4L Speeder, F-10LB Nut Spinner, F-40A Handle, F-5L Slide Bar, FX-61 Flexextension, FX-2, FX-6, FX-11 Ext. Bars, FU-8A Universal, 211-FM Socket Set, 211-SFM Socket Set, 206-FSM Socket Set, 208-FUM Flexocket Set and KRA-250 Box.

237-MF Set. Same as above but without box.

28-PIECE BRITISH-STD FERRET SET

[A] 228-WF-B British-Standard ferret (3/8" Drive) Set. Includes: F-71D Ratchet, F-67B Ratchet Adaptor, FRS-70 Ratchet Spinner, F-4L Speeder, F-10LB Nut Spinner, F-40A Handle, F-5L Slide Bar, FX-61 Flexextension, FX-2, FX-6, FX-11 Ext. Bars, FU-8A Universal, 212 WF Socket Set, 204-WFU Flexocket Set and KRA-250 Box.

228-WF Set. Same as above but without box.

20-PIECE METRIC FERRET SET

[B] 220-M-B Metric Ferret (3/8" Drive) Set consisting of the following: F-71D Ratchet, F-4L Speeder Handle, F-10LB Nut Spinner, F-5L Slide Bar, FX-2, FX-6, FX-11 Extension Bars, FU-8A Universal Joint and 11 Double Hex Sockets, F-9M through F-19M and SF-261 14 mm. spark plug socket all packed in the KRA-281 Metal Box as illustrated.

220-M Same Set as above but without box.

21-PIECE BRITISH-STD FERRET SET

[B] 221-W-B British-Standard Ferret (3/8" Drive) Set consisting of the following: F-71D Ratchet, F-4L Speeder Handle, F-10LB Nut Spinner, F-5L Slide Bar, FX-2, FX-6, FX-11 Extension Bars, FU-8A Universal Joint, 12 Double Hex Sockets WF-94 through WF-104 and SF-261 spark plug socket, all packed in the KRA-281 Metal Box as illustrated.

221-W Same Set as above but without box.

25-PIECE METRIC MASTER SETS

[C] 325-MM-B Metric Master (1/2" Drive) Set consisting of the following: L-710 Ratchet, 67-C Ratchet Adaptor, K-4L Nut Speeder, SN-18M Nut Spinner, S-12L Slide Bar, SX-3, SX-5, SX-10 Extension Bars, 8-L Universal Joint and 16 Double Hex Sockets SW-10M through SW-25M all packed in the KRA-280 Metal Box as illustrated.

325-MM Same Set as above but without box.

21-PIECE BRITISH-STD MASTER SETS

[C] 321-MW-B British-Standard Master (1/2" Drive) Set consisting of the following: L-710 Ratchet, 67C Ratchet Adaptor, K-4L Nut Speeder, SN-18M Nut Spinner, S-12L Slide Bar, SX-3, SX-5, SX-10 Extension Bars, 8-L Universal Joint and 12 Double Hex Sockets WSW-96A through WSW-108 all packed in the KRA-280 Metal Box.

321-MW Same Set as above but without box.

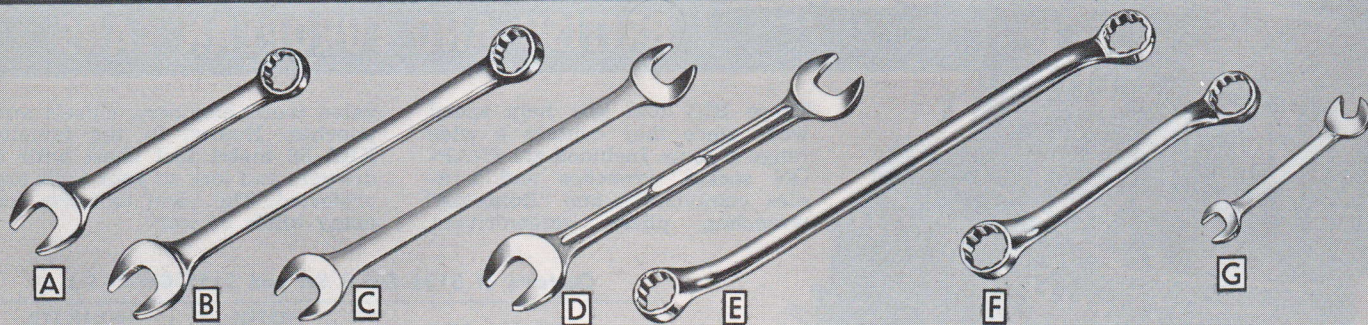
38-PIECE METRIC MASTER SETS

[D] 338-MM-B Metric Master (1/2" Drive) Set consisting of the following: L-710 Ratchet, 67-C Ratchet Adaptor, K-4L Nut Speeder, SN-18M Nut Spinner, S-12L Slide Bar, SX-3, SX-5, SX-10 Extension Bars, 8-L Universal

Joint, 23 Double Hex Sockets SW-10M through SW-32M and 6 Deep Double Hex Sockets S-14M through S-27M all packed in the KRA-280 Metal Box as illustrated.

338-MM Same Set as above but without box.

METRIC AND BRITISH STANDARD WRENCHES AND SETS



METRIC WRENCHES AND SETS

COMBINATION WRENCHES

A SHORT SERIES

Size	Number	Length
6 mm.	OEX-6M	3"
7 mm.	OEX-7M	3 1/4"
8 mm.	OEX-8M	3 1/2"
9 mm.	OEX-9M	3 3/8"
10 mm.	OEX-10M	5 1/4"
11 mm.	OEX-11M	5 3/8"
12 mm.	OEX-12M	5 3/4"
13 mm.	OEX-13M	5 3/4"
14 mm.	OEX-14M	6"
15 mm.	OEX-15M	6 1/8"
16 mm.	OEX-16M	6 1/4"
17 mm.	OEX-17M	6 3/8"
18 mm.	OEX-18M	6 5/8"
19 mm.	OEX-19M	9 3/4"
20 mm.	OEX-20M	11"
21 mm.	OEX-21M	11"
22 mm.	OEX-22M	11 7/8"
23 mm.	OEX-23M	13 1/8"
24 mm.	OEX-24M	13 1/8"
27 mm.	OEX-27M	15"
32 mm.	OEX-32M	16 7/8"

OEXM-713-K Metric Short Handle Combination Wrench Set. 13 wrenches, OEX-6M through OEX-18M in C-134C kit bag.

OEXM-713 Set. Above set without the kit bag.

OEXM-708-K Metric Short Handle Combination Wrench Set. 8 wrenches, OEX-19M through OEX-32M in C-83B kit bag.

OEXM-708 Set. Above set without the kit bag.

OEXM-721 Set. All 21 wrenches OEX-6M through OEX-32M.

B LONG SERIES

Size	Number	Length
12 mm.	OEX-120M	7 11/16"
13 mm.	OEX-130M	7 11/16"
14 mm.	OEX-140M	8 3/16"
15 mm.	OEX-150M	8 3/4"
16 mm.	OEX-160M	8 3/4"
17 mm.	OEX-170M	9 1/4"
18 mm.	OEX-180M	9 1/4"

OEXM-707-K Metric Long Handle Combination Wrench Set. 7 wrenches, OEX-120M through OEX-180M in C-75B kit bag.

OEXM-707 Set. Above set without the kit bag.

METRIC SOCKET-TYPE HEX HEAD WRENCHES

(Ferret—3/8" Square Drive)

FA-4M 4mm. Hexagon.
FA-5M 5mm. Hexagon.
FA-6M 6mm. Hexagon.
FA-8M 8mm. Hexagon.

D OPEN END WRENCHES

Sizes in mm.	Stock No.	Length	Sizes in mm.	Stock No.	Length
6 & 7	*VSM-67	4 1/32"	17 & 19	*VSM-1719	8 3/8"
8 & 9	VSM-89	4 1/2"	20 & 22	*VSM-2022	10"
8 & 10	*VSM-810	4 1/2"	21 & 23	*VSM-2123	11"
9 & 11	*VSM-911	5"	22 & 24	VSM-2224	11 1/2"
11 & 14	VSM-1114	5 11/16"	24 & 26	*VSM-2426	12 1/2"
12 & 13	*VSM-1213	5 1/2"	24 & 27	VSM-2427	12 1/2"
12 & 14	VSM-1214	6"	25 & 28	*VSM-2528	12 1/2"
13 & 15	VSM-1315	6 1/4"	27 & 29	*VSM-2729	13 1/4"
14 & 15	*VSM-1415	6 1/2"	27 & 32	VSM-2732	14"
14 & 17	VSM-1417	6 1/2"	28 & 32	VSM-2832	14"
16 & 18	*VSM-1618	7"	30 & 32	*VSM-3032	14"

OEM-813-K Metric Open End Wrench Set. 13 wrenches, one of each of above marked with an asterisk (*), in C-135B kit bag.

OEM-813 Set. Above set, tools only.

BOXOCKET WRENCHES E LONG SERIES

Sizes in mm.	Stock No.	Length	Sizes in mm.	Stock No.	Length
8 & 10	X-810M	8"	20 & 21	*X-2021M	12 7/32"
10 & 11	*X-1011M	8 1/4"	22 & 23	*X-2223M	12 1/2"
11 & 14	X-1114M	8 3/4"	22 & 24	X-2224M	12 7/8"
12 & 13	*X-1213M	9 1/4"	24 & 25	*X-2425M	13 1/8"
12 & 14	X-1214M	8 3/4"	24 & 27	X-2427M	14"
13 & 15	X-1315M	9 1/4"	26 & 27	*X-2627M	14 19/32"
14 & 15	*X-1415M	9 3/8"	27 & 32	*X-2732M	16 1/8"
14 & 17	*X-1417M	9 5/8"	28 & 29	*X-2829M	15 5/16"
16 & 17	*X-1617M	10"	30 & 32	*X-3032M	15 15/16"
18 & 19	*X-1819M	11 1/2"	31 & 32	*X-3132M	16 11/32"

XM-614-K Metric Long Series Boxocket Wrench Set. 14 wrenches, one of each of above marked with an asterisk (*) in C-141B kit bag.

XM-614 Set. Above set, tools only.

BOXOCKET WRENCHES F SHORT SERIES

Sizes in mm.	Stock No.	Length	Sizes in mm.	Stock No.	Length
6 & 7	XS-67M	4 3/16"	13 & 14	XS-1314M	5 1/2"
8 & 9	XS-89M	4 7/16"	15 & 16	XS-1516M	5 27/32"
9 & 10	XS-910M	4 3/4"	17 & 19	XS-1719M	6 3/16"
11 & 12	XS-1112M	5 5/16"	18 & 20	XS-1820M	6 9/16"

XSM-608-K Metric Short Series Boxocket Wrench Set. 8 Wrenches, XS-67M through XS-1820M in C-80C kit bag.

XSM-608 Set. Above set, tools only.

METRIC HEX HEAD WRENCHES

AWM-120K Set. Consists of 12 Metric hex head wrenches, one each of those listed at right, from AWM-2A through AWM-19A, in C-84B kit bag.

AWM-90K Set. Consists of 9 Metric hex head wrenches, AWM-2A thru AWM-12A, in the C-11A kit bag.

BRITISH STANDARD WRENCHES

A COMBINATION WRENCHES SHORT SERIES

British Bolt Size	Stock Number	Length
3/16"	WOEX-6A	5 1/4"
1BA	WOEX-70	5 1/4"
0BA	WOEX-80	5 3/8"
1/4"	WOEX-90	5 3/8"
5/16"	WOEX-100	6"
3/8"	WOEX-110	6 1/4"
7/16"	WOEX-120	6 1/2"

SET

WOEXS-707-K British Standard Short Combination Wrench Set. 7 wrenches, WOEX-6A through WOEX-120 in C-74C kit bag.

WOEXS-707 Set. Above set without the kit bag.

B COMBINATION WRENCHES LONG SERIES

British Bolt Size	Stock Number	Length
5/16"	WOEX-10	8 1/4"
3/8"	WOEX-11	8 5/8"
7/16"	WOEX-12	9 3/4"
1/2"	WOEX-13	11"

SET

WOEXL-704 British Standard Long Combination Wrench Set. 4 wrenches, WOEX-10 through WOEX-13.

C TAPPET WRENCHES

British Bolt Size	Stock Number	Length
1/4" & 5/16"	WTB-810	9 1/2"
3/8" & 7/16"	WTB-1214	9 1/2"

SET

WTB-4 British Standard Tappet Wrench Set. 4 wrenches, 2 each of WTB-810 and WTB-1214.

F BOXOCKET WRENCHES SHORT SERIES

British Bolt Size	Stock Number	Length
3/16" & 1/4"	WXS-6A9	4 1/16"
1/4" & 5/16"	WXS-910	5 3/16"
5/16" & 3/8"	WXS-1011	5 25/32"
3/8" & 7/16"	WXS-1112	6 3/32"
7/16" & 1/2"	WXS-1213	6 19/32"
1/2" & 9/16"	WXS-1314	6 3/4"

SET

WXS-606-K British Standard Short Boxocket Wrench Set. 6 wrenches, WXS-6A9 through WXS-1314 in C-60C kit bag.

WXS-606 Set. Above set without the kit bag.

D OPEN END WRENCHES

British Bolt Size	Stock Number	Length
3/16" & 1/4"	VS8-68	5 1/8"
1/4" & 5/16"	VS8-810	6 1/4"
5/16" & 3/8"	VS8-1012	6 13/16"
3/8" & 7/16"	VS8-1214	8"
7/16" & 1/2"	VS8-1416	10 1/4"
1/2" & 9/16"	VS8-1618	10 1/4"
9/16" & 5/8"	VS8-1820	12 1/2"
5/8" & 11/16"	VS8-2022	13 3/8"
11/16" & 7/8"	VS8-2228	14 1/4"

SET

VS8-809-K British Standard Open End Wrench Set. 9 wrenches, VS8-68 through VS8-2228 in C-91B kit bag.

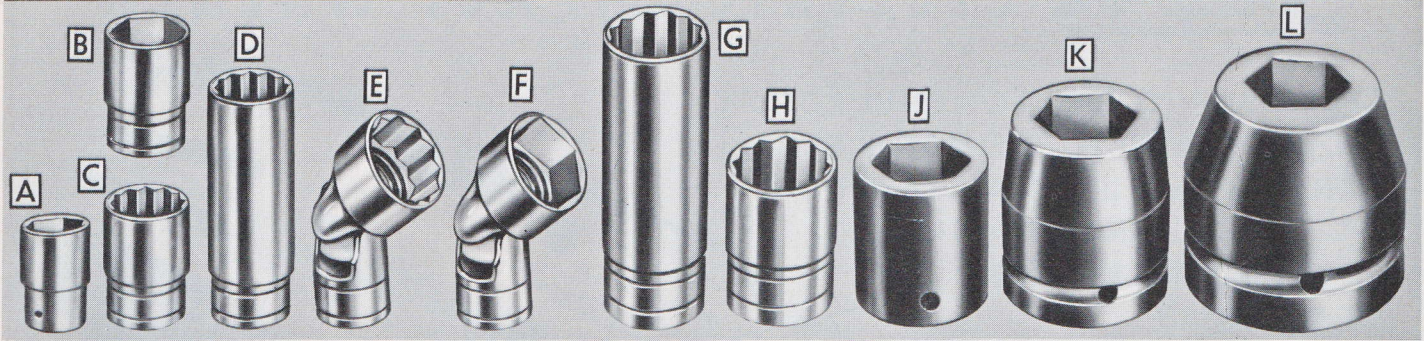
VS8-809 Set. Above set without the kit bag.

G IGNITION-OPEN END WRENCHES

British Bolt Size	Stock Number	Length
5BA & 4BA	WC-43	2 7/8"
3BA & 2BA	WC-65	3 1/4"

The .223" and .282" ends are at a 45°. The other ones are straight.

METRIC AND BRITISH STANDARD WRENCHES AND SETS



METRIC SOCKET WRENCHES AND SETS

1/4" SQ. DRIVE A SINGLE HEX

Size	Number
4 mm.	TM-4M
5 mm.	TM-5M
6 mm.	TM-6M
7 mm.	TM-7M
8 mm.	TM-8M
9 mm.	TM-9M
10 mm.	TM-10M
11 mm.	TM-11M
12 mm.	TM-12M
13 mm.	TM-13M
14 mm.	TM-14M

111-MTM 1/4" Drive Single Hex Set. 11 sockets, TM-4M to TM-14M.

3/8" SQ. DRIVE B SINGLE HEX

Size	Number
9 mm.	FS-9M
10 mm.	FS-10M
11 mm.	FS-11M
12 mm.	FS-12M
13 mm.	FS-13M
14 mm.	FS-14M

206-FSM 3/8" Drive Single Hex Set. 6 sockets, FS-9M to FS-14M.

3/8" SQ. DRIVE C DOUBLE HEX

Size	Number
9 mm.	F-9M
10 mm.	F-10M
11 mm.	F-11M
12 mm.	F-12M
13 mm.	F-13M
14 mm.	F-14M
15 mm.	F-15M
16 mm.	F-16M
17 mm.	F-17M
18 mm.	F-18M
19 mm.	F-19M

211-FM-T 3/8" Drive Double Hex Set. 11 sockets, F-9M to F-19M in KTA-230 metal tray.

211-FM Set. The above set without the tray.

Handles to fit the sockets listed on this page may be located as follows.

1/4" square drive on pages 18-19.

3/8" square drive on page 21.

1/2" square drive on pages 26-27.

3/8" SQ. DRIVE D DEEP DOUBLE HEXAGON

Size	Number
9 mm.	SF-9M
10 mm.	SF-10M
11 mm.	SF-11M
12 mm.	SF-12M
13 mm.	SF-13M
14 mm.	SF-14M
15 mm.	SF-15M
16 mm.	SF-16M
17 mm.	SF-17M
18 mm.	SF-18M
19 mm.	SF-19M

211-SFM 3/8" Drive. Deep Double Hex Set. 11 Sockets, SF-9M to SF-19M.

3/8" SQ. DRIVE H HEX FLEXOCKETS F SINGLE HEX

Size	Number
10 mm.	FSU-10M
11 mm.	FSU-11M

E DOUBLE HEX

Size	Number
12 mm.	FU-12M
13 mm.	FU-13M
14 mm.	FU-14M
15 mm.	FU-15M
17 mm.	FU-17M
19 mm.	FU-19M

208-FUM-B 3/8" Drive Flexocket Set. 8 sockets, FSU-10M to FU-19M in KRA-223A metal box.

1/2" SQ. DRIVE G DEEP DOUBLE HEXAGON

Size	Number
14 mm.	S-14M
17 mm.	S-17M
19 mm.	S-19M
20.6 mm.	S-20.6M
22 mm.	S-22M
27 mm.	S-27M

306-SM 1/2" Drive Deep Double Hex Set. 6 sockets, S-14M to S-27M.

1/2" SQ. DRIVE H DOUBLE HEX

Size	Number
10 mm.	SW-10M
11 mm.	SW-11M
12 mm.	SW-12M
13 mm.	SW-13M
14 mm.	SW-14M
15 mm.	SW-15M
16 mm.	SW-16M
17 mm.	SW-17M
18 mm.	SW-18M
19 mm.	SW-19M
20 mm.	SW-20M
21 mm.	SW-21M
22 mm.	SW-22M
23 mm.	SW-23M
24 mm.	SW-24M
25 mm.	SW-25M
26 mm.	SW-26M
27 mm.	SW-27M
28 mm.	SW-28M
29 mm.	SW-29M
30 mm.	SW-30M
31 mm.	SW-31M
32 mm.	SW-32M

316-SWM 1/2" Drive Double Hex Set. 16 sockets, SW-10M to SW-25M.

323-SWM 1/2" Drive Double Hex Set. 23 sockets, SW-10 to SW-32M.

METRIC IMPACT SOCKETS

Built to stand hard use in powered impact wrenches and nut setters for industrial assembly and maintenance work.

1/2" SQ. DRIVE J SINGLE HEX

Size	Number
10 mm.	P-100M
11 mm.	P-110M
12 mm.	P-120M
13 mm.	P-130M
14 mm.	P-140M
15 mm.	P-150M
16 mm.	P-160M
17 mm.	P-170M
19 mm.	P-190M
22 mm.	P-220M
24 mm.	P-240M
27 mm.	P-270M

3/4" SQ. DRIVE K SINGLE HEX

Size	Number
22 mm.	IM-222M
24 mm.	IM-242M
27 mm.	IM-272M
30 mm.	IM-302M
32 mm.	IM-322M
36 mm.	IM-362M
38 mm.	IM-382M

1" SQ. DRIVE L SINGLE HEX

Size	Number
41 mm.	IM-413M
46 mm.	IM-463M
50 mm.	IM-503M
55 mm.	IM-553M
60 mm.	IM-603M

BRITISH STANDARD SOCKET WRENCHES AND SETS

1/4" SQ. DRIVE A SINGLE HEX

British Bolt Size	Number
2BA	WTM-96
3/16"	WTM-96A
1/4"	WTM-99
5/16"	WTM-100
3/8"	WTM-101

3/8" SQ. DRIVE C DOUBLE HEX

British Bolt Size	Number
4BA	*WF-94
3BA	*WF-95
2BA	WF-96
3/16"	WF-96A
1BA	WF-97
0BA	WF-98
1/4"	WF-99
5/16"	WF-100
3/8"	WF-101
1/2"	WF-102
1/2"	WF-103
9/16"	WF-104

*Single Hex

1/2" SQ. DRIVE H DOUBLE HEX

British Bolt Size	Number
3/16"	WSW-96A
0BA	WSW-98
1/4"	WSW-99
5/16"	WSW-100
3/8"	WSW-101
7/16"	WSW-102
1/2"	WSW-103
9/16"	WSW-104
5/8"	WSW-105
11/16"	WSW-106
3/4"	WSW-107
13/16"	WSW-108
7/8"	WSW-108

SETS

105-WTM 1/4" Drive Single Hex Set. 5 sockets, WTM-96 to WTM-101.

212-WF-T 3/8" Drive Double Hex Set. 12 sockets, WF-94 to WF-104 in KTA-232 metal tray. The tray has red enamel finish.

212-WF Same as 212-WF-T but without the tray.

312-WSW 1/2" Drive Double Hex Set. 12 sockets, WSW-96A to WSW-108.

NOMINAL WRENCH SIZES FOR BRITISH BOLTS AND NUTS SINCE 1951

British Bolt Size	Wrench Size
4BA	.248"
3BA	.282"
2BA	.324"
3/16"	.340"
1BA	.365"
0BA	.413"
1/4"	.445"
5/16"	.525"
3/8"	.600"
7/16"	.710"
1/2"	.820"
9/16"	.920"
5/8"	1.010"
11/16"	1.100"
3/4"	1.200"
13/16"	1.200"
7/8"	1.300"

METRIC VALVE GUIDE PILOTS

- VX-236 6mm. Pilot. 2 3/8" (60.32mm.) long.
- VX-255 6 1/2mm. Pilot. 2 3/8" (60.32mm.) long.
- VX-275 7mm. Pilot. 2 3/8" (60.32mm.) long.
- VX-295 7 1/2mm. Pilot. 2 3/4" (69.85mm.) long.
- VX-315 8mm. Pilot. 2 3/4" (69.85mm.) long.
- VX-334 8 1/2mm. Pilot. 2 3/4" (69.85mm.) long.
- VX-354 9mm. Pilot. 2 3/4" (69.85mm.) long.
- VX-374 9 1/2mm. Pilot. 3" (76.20mm.) long.
- VX-393 10mm. Pilot. 3" (76.20mm.) long.
- VX-820 Pilot. For Ford Prefect.

METRIC AND BRITISH-WHITWORTH TAP AND DIE SETS

★TDM-109A Metric Set. Contains 9 sizes of taps and dies listed below. TD-88 Tap Wrench, TD-10 Die Stock, in TDM-109-1 fitted wood case.

Stock Nos.		Size
Taps	Dies	
★T-407M	★D-407M	4-.70
★T-508M	★D-508M	5-.80
★T-610M	★D-610M	6-1.0
★T-710M	★D-710M	7-1.0
★T-812M	★D-812M	8-1.25
★T-912M	★D-912M	9-1.25
★T-1015M	★D-1015M	10-1.50
★T-1115M	★D-1115M	11-1.50
★T-1217M	★D-1217M	12-1.75

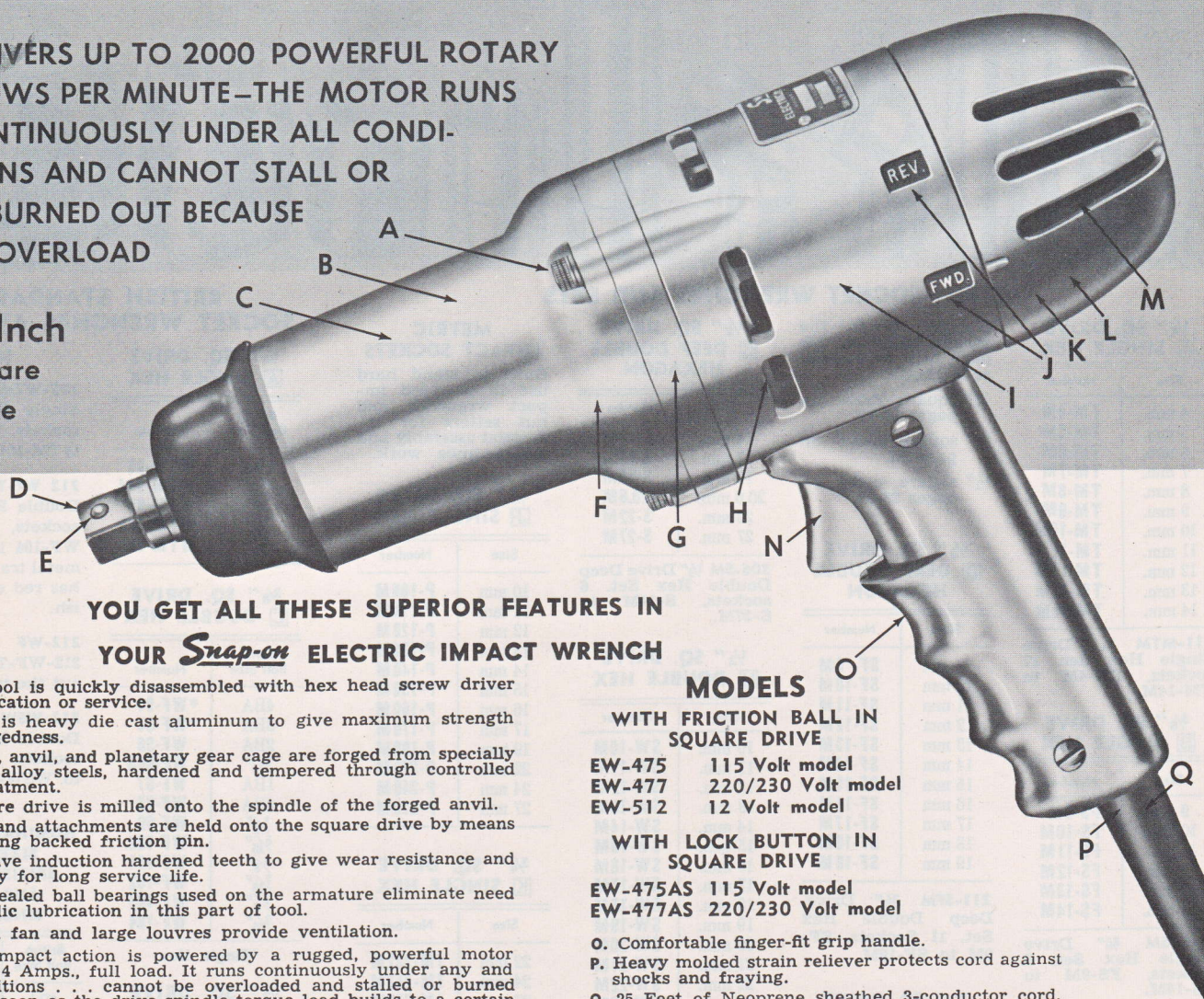
★TDW-111A British-Whitworth Set. Contains taps and dies below. TD-88 Tap Wrench, TD-10 Die Stock, in TDW-111-1 wood case.

Stock Nos.		Size
Taps	Dies	
★T-2520W	★D-2520W	1 1/4-20 Whitworth
★T-3118W	★D-3118W	3/16-18 Whitworth
★T-3716W	★D-3716W	3/8-16 Whitworth
★T-4314W	★D-4314W	1/2-14 Whitworth
★T-5012W	★D-5012W	3/4-12 Whitworth
★T-125WP	★D-125WP	1/2 Pipe
★T-2526W	★D-2526W	1/4-26 B. S. F.
★T-3122W	★D-3122W	3/16-22 B. S. F.
★T-3720W	★D-3720W	3/8-20 B. S. F.
★T-4318W	★D-4318W	1/2-18 B. S. F.
★T-5016W	★D-5016W	3/4-16 B. S. F.

Snap-on ELECTRIC IMPACT WRENCH

DELIVERS UP TO 2000 POWERFUL ROTARY BLOWS PER MINUTE—THE MOTOR RUNS CONTINUOUSLY UNDER ALL CONDITIONS AND CANNOT STALL OR BE BURNED OUT BECAUSE OF OVERLOAD

**1/2 Inch
Square
Drive**



**YOU GET ALL THESE SUPERIOR FEATURES IN
YOUR Snap-on ELECTRIC IMPACT WRENCH**

- A. Entire tool is quickly disassembled with hex head screw driver for lubrication or service.
- B. Housing is heavy die cast aluminum to give maximum strength and ruggedness.
- C. Hammer, anvil, and planetary gear cage are forged from specially selected alloy steels, hardened and tempered through controlled heat treatment.
- D. 1/2" square drive is milled onto the spindle of the forged anvil.
- E. Sockets and attachments are held onto the square drive by means of a spring backed friction pin.
- F. Gears have induction hardened teeth to give wear resistance and durability for long service life.
- G. Grease sealed ball bearings used on the armature eliminate need of periodic lubrication in this part of tool.
- H. Powerful fan and large louvers provide ventilation.
- I. Rotary impact action is powered by a rugged, powerful motor rated at 4 Amps., full load. It runs continuously under any and all conditions . . . cannot be overloaded and stalled or burned out. As soon as the drive spindle torque load builds to a certain point the rotary action is transformed, through the impact mechanism, into 2000 sharp, powerful blows per minute delivered to the anvil end of the drive spindle. Blows become heavier as the torque load increases . . . thus the larger or tighter the nut the heavier the turning impact it receives. None of the hammer shock is transmitted to the operator.
- J. Forward and reverse positions are very clearly marked.
- K. Twisting the end cap reverses the direction of the tool and automatically shifts position of brushes to give best possible commutator contact for most efficient operation.
- L. Reversing switch is simple in design with stationary and movable contacts mounted on non-arcng plastic base, sealed against dirt with a plastic cap. Wiring connections are made without nuts or screws and will not work loose.
- M. Spirally coiled beryllium copper springs permit use of long, heavy duty carbon brushes.
- N. The oversized 12 Amp. "on-off" trigger switch is built to give long service.

MODELS

**WITH FRICTION BALL IN
SQUARE DRIVE**

EW-475 115 Volt model
EW-477 220/230 Volt model
EW-512 12 Volt model

**WITH LOCK BUTTON IN
SQUARE DRIVE**

EW-475AS 115 Volt model
EW-477AS 220/230 Volt model

- O. Comfortable finger-fit grip handle.
- P. Heavy molded strain reliever protects cord against shocks and fraying.
- Q. 25 Feet of Neoprene sheathed 3-conductor cord, plugs have two power prongs and ground prong.

Specifications

MOTOR: Universal—AC-DC 25/60 Cycles, Single Phase.
VOLTAGES: 115 Volt, 220/230 Volt.

AMPERES: Conservative rating 4 amps.

SPEED: 1900 R.P.M. No Load—Forward or Reverse.

IMPACTS: 2000 per minute.

LENGTH: 11 3/8" overall.

DIAMETER: 3 9/16" at widest part of wrench.

CLEARANCE: Top of wrench to center of spindle is only 1 1/2". The wrench can be used in very close places.

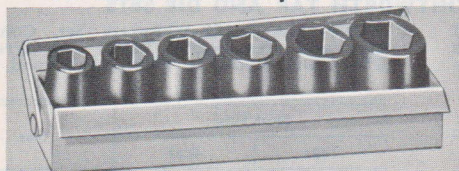
BALANCE: The length and weight are well balanced on the handle making the wrench easy to use without tiring the arm and hand.

CORD: 25 feet of Heavy Duty Neoprene Sheathed Type S.

WEIGHT: Net weight with cord. 9 3/4 lbs.

STARTER SET OF INDUSTRIAL SOCKETS

For use with above impact wrenches



306-P-T Set. Six popular sizes for users of Impact Wrenches who require only a limited range. Complete with KTA-241 Tray. Sockets have black finish and are especially built and heat treated for impact use. Other sizes are listed on opposite page.

Wrench Size	Stock No.
1/2"	P-160B
9/16"	P-180
5/8"	P-200
11/16"	P-220
3/4"	P-240
13/16"	P-260

INDUSTRIAL "FLEXOCKETS" FOR IMPACT USE

These 1/2" drive regular-type industrial "Flexockets" are black finish and especially designed and heat treated to withstand impact wrench operation. Ball-type construction allows easy movement up to a 30-degree angle and helps speed those hard to reach nut turning jobs. A conical spring holds the socket at the desired angle for easy application to the nut but does not interfere with the operation.

309-IMB Set. Nine "Flexockets"; IMB-160A through IMB-320A.

Thin-wall Type. Similar in design to the regular type but with thinner walls. This permits use where clearance problems prevent use of regular type.



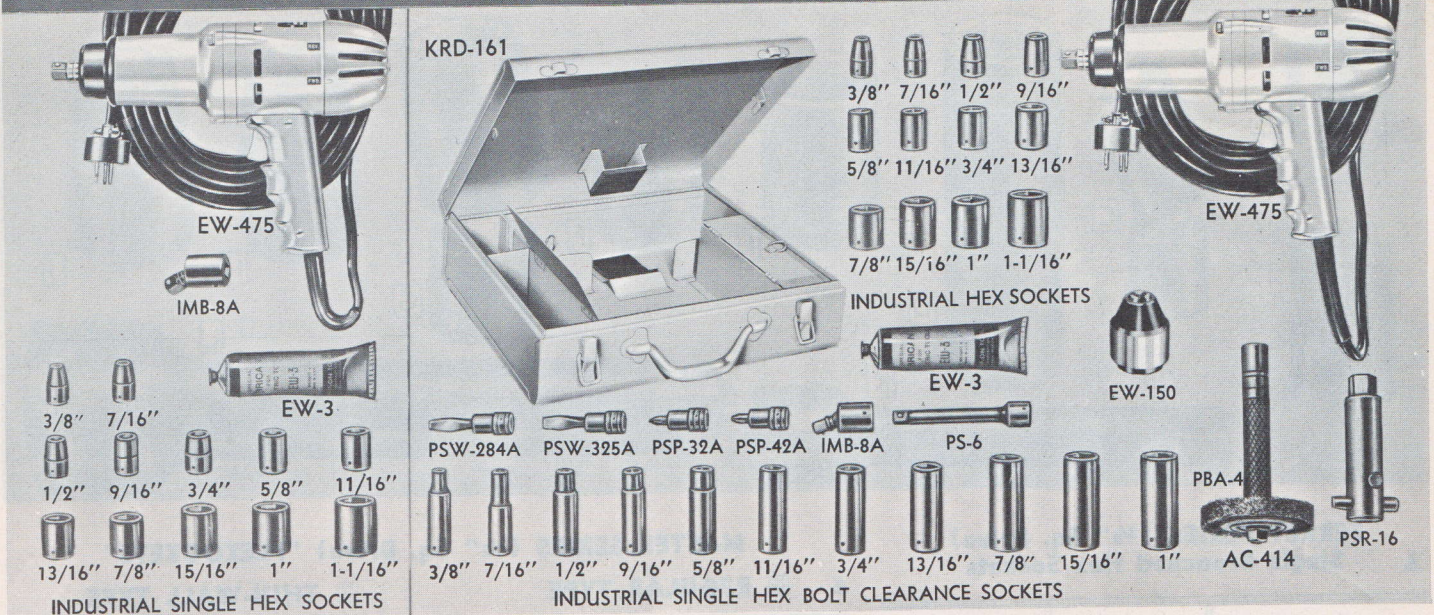
REGULAR TYPE—1/2" DRIVE

Wrench Size	Stock No.	Outside Diam.		Overall Length
		Socket End	Hdle. End	
1/2"	IMB-160A	3/4"	1"	2 1/4"
9/16"	IMB-180A	7/8"	1"	2 5/16"
5/8"	IMB-200A	1"	1"	2 7/16"
11/16"	IMB-220A	1 1/8"	1"	2 11/16"
3/4"	IMB-240A	1 1/4"	1"	2 13/16"
13/16"	IMB-260A	1 3/8"	1"	2 15/16"
7/8"	IMB-280A	1 1/2"	1"	2 17/16"
15/16"	IMB-300A	1 5/8"	1"	3"
1"	IMB-320A	1 3/4"	1"	3 1/16"

THIN-WALL TYPE

Wrench Size	Stock No.	Outside Diam.	Overall Length
1/2"	IMBL-140	5/8"	2-1/8"
9/16"	IMBL-160	7/8"	2-1/8"
5/8"	IMBL-180	1"	2-1/8"

SPEEDS NUT TURNING and MANY OTHER JOBS



Snap-on IMPACT WRENCH SETS

No. 335A-EW-B set

315B-EW-B Impact Wrench Set. A basic nut turning set. Consists of the EW-475 Impact Wrench with tube of lubricant, IMB-8A universal joint and twelve industrial standard hexagon sockets P-120B thru P-340 1/2 listed at the right. In KRD-161 special metal case.

315B-EW Set. Above set without the case.

335A-EW-B Impact Wrench Set. Contains complete ranges of standard and bolt clearance type sockets, the EW-475 Impact Wrench and other units listed at the right. In KRD-161 special metal case.

335A-EW Set. Above set without the case.

KRD-161 Metal Case. Sturdy, spot welded, heavy gauge steel construction. Padded cradle holds the wrench securely. Hinged lids prevent sockets from spilling when case is lifted. Fitted with two clasp fasteners, large metal carrying handle and finished in red enamel. Size 15 1/4" x 13 1/2" x 4 3/4".

CONTENTS OF 335A-EW-B SET SHOWN ABOVE

No.	Description
EW-475	Impact Wrench (115 volt)
EW-3	Tube of Lubricant
EW-150	Collet-Type Chuck
PBA-4A	Wire Brush Adaptor
★AC-414	4 1/4" Diameter, Wire Brush
PSR-16	Stud Remover
IMB-8A	Universal Joint
PS-6	5" Extension Bar
★PSW-284A	7/16" Blade Screw Driver
★PSW-325A	1 1/2" Blade Screw Driver
★PSP-32A	No. 3 Phillips Screw Driver
★PSP-42A	No. 4 Phillips Screw Driver
KRD-161	Metal Box. 15 1/4" x 13 1/2" x 4 3/4". Red enameled finish.

INDUSTRIAL HEXAGON SOCKETS

Standard		Bolt Clearance	
No.	Size	No.	Size
P-120B	3/8"	SP-120	3/8"
P-140B	7/16"	SP-140	7/16"
P-160B	1/2"	SP-160	1/2"
P-180	9/16"	SP-180	9/16"
P-200	5/8"	SP-200	5/8"
P-220	1 1/16"	SP-220	1 1/16"
P-240	3/4"	SP-240	3/4"
P-260	13/16"	SP-260	13/16"
P-280	7/8"	SP-280	7/8"
P-300 1/2	1 5/16"	SP-300 1/2	1 5/16"
P-320 1/2	1"	SP-320 1/2	1"
P-340 1/2	1 1/16"	—	—

ACCESSORY TOOLS FOR USE WITH Snap-on IMPACT WRENCHES

A STANDARD TIP SCREW DRIVERS

Complete Tool			Bit Only No.	Roll Pin No.
Stock No.	Tip Size	Length		
★PSW-284A	7/16"	3 1/16"	★PSW-284A-2	ESD-310
★PSW-325A	1/2"	3 1/16"	★PSW-325A-2	ESD-310

B PHILLIPS BIT SCREW DRIVERS

Complete Tool			Bit Only No.	Roll Pin No.
Stock No.	Bit Size	Length		
★PSP-32A	3	2 3/16"	★PSP-32A-2	ESD-310
★PSP-42A	4	2 3/16"	★PSP-42A-2	ESD-310

C HEX HEAD WRENCHES

Complete Tool			Bit Only No.	Roll Pin No.
Stock No.	Hex Size	Length		
★SA-12A	3/8"	27 1/8"	★SA-12A-2	ESD-310
★SA-16A	1/2"	3 1/16"	★SA-16A-2	ESD-311
★SA-18A	9/16"	3 1/16"	★SA-18A-2	ESD-311

D IMPACT STUD REMOVER

PSR-16 Impact Stud Remover. Designed for use with the SNAP-ON Impact Wrench, but it also has a 1" outside hex drive for use with 1" socket and handle or other wrench. Studs 3/8" to 5/8" diameter can be handled. Housing is 5 1/2" long.

EW-3 Tube of Lubricant. Recommended for your SNAP-ON Impact Wrench.

E INDUSTRIAL SQUARE SOCKETS

Wrench Size Nominal	Stock Number	Outside Diameter		Overall Length
		Socket End	Handle End	
3/8"	P-412	23/32"	7/8"	1 1/2"
7/16"	P-414	13/16"	15/16"	1 1/2"
1/2"	P-416	29/32"	1"	1 1/2"
9/16"	P-418	1 1/16"	1 1/8"	1 1/2"
5/8"	P-420	1 1/8"	1 3/16"	1 1/2"
11/16"	P-422	1 1/4"	1 1/4"	1 1/2"
3/4"	P-424	1 5/16"	1 3/8"	1 1/2"
13/16"	P-426	1 7/16"	1 7/16"	1 1/2"
7/8"	P-428	1 1/2"	1 9/16"	1 1/2"
1"	P-432	1 23/32"	1 3/4"	1 3/4"

F WIRE BRUSH

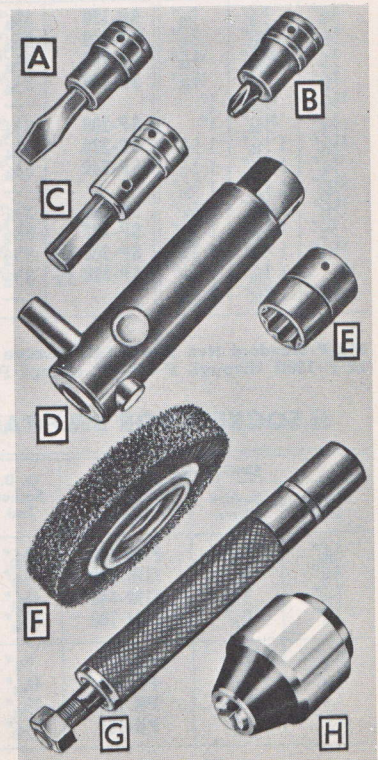
★AC-414 Wire Brush. 4 1/4" diameter, 3 1/4" face. For use with PBA-4 Impact Wrench Adaptor.

G WIRE BRUSH ADAPTOR

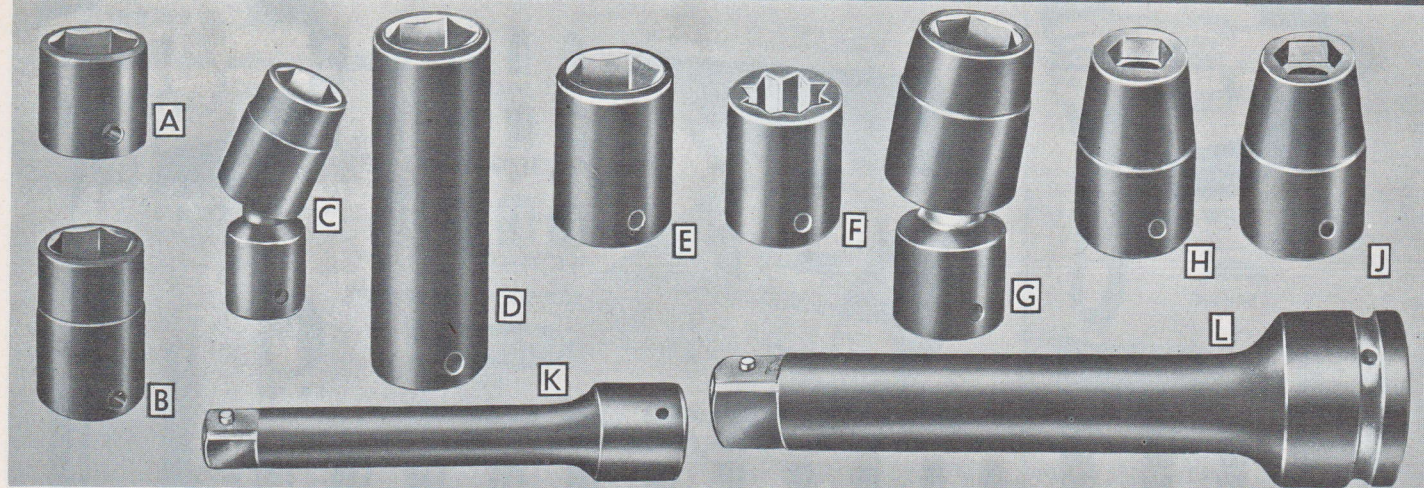
PBA-4A Wire Brush Adaptor. For use with Impact Wrench. Center spindle revolves in bushings at each end of knurled hand grip. Length 5".

H KEYLESS CHUCK

EW-150 Keyless Chuck Designed for use on 1/2" square drive impact wrenches. Simply attach onto the impact wrench as you would a socket and insert drill bit, tap, etc. Rotate chuck housing to tighten jaws. The chuck has three spring loaded jaws which self-center automatically onto the drill bit. Capacity of the chuck is 1/8" to 1 1/2".



INDUSTRIAL WRENCHES FOR USE ON



FERRET SERIES (3/8" Sq. Drive) Single Broached Hex Sockets

Wrench Size	Outside Diameter		A STD. TYPE		B DEEP TYPE	
	Socket End	Handle End	Stock No.	Overall Length	Stock No.	Overall Length
5/16"	1/2"	11/16"	PF-100	7/8"	—	—
11/32"	17/32"	11/16"	PF-110	7/8"	—	—
3/8"	9/16"	11/16"	PF-120	7/8"	SPF-120	11 1/2"
7/16"	21/32"	3/4"	PF-140	7/8"	SPF-140	11 1/2"
1/2"	3/4"	3/4"	PF-160	7/8"	SPF-160	11 1/2"
9/16"	13/16"	13/16"	PF-180	7/8"	SPF-180	11 1/2"
5/8"	29/32"	15/16"	PF-200	7/8"	SPF-200	11 1/2"
11/8"	31/32"	1"	PF-220	1"	—	—
3/4"	1 1/16"	1 1/16"	PF-240	1"	—	—

MASTER SERIES (1/2" Sq. Drive) "FLEXOCKETS"

G REGULAR TYPE

Wrench Size	Stock Number	Outside Diameter		Overall Length
		Socket End	Handle End	
1/2"	IMB-160A	3/4"	1"	2 5/16"
9/16"	IMB-180A	27/32"	1"	2 7/16"
5/8"	IMB-200A	29/32"	1"	2 1/2"
11/16"	IMB-220A	1 1/16"	1"	2 19/32"
13/16"	IMB-240A	1 3/16"	1"	2 21/16"
15/16"	IMB-260A	1 5/16"	1"	2 23/16"
1"	IMB-280A	1 7/8"	1"	2 25/16"
	IMB-300A	1 9/16"	1"	3"
	IMB-320A	1 11/16"	1"	3 1/16"

G THIN-WALL TYPE

For use when clearance is a problem

Wrench Size	Stock Number	Outside Diameter		Overall Length
		Socket End	Handle End	
7/16"	IMBL-140	5/8"	15/16"	2 1/8"
1/2"	IMBL-160	23/32"	15/16"	2 1/8"
9/16"	IMBL-180	13/16"	15/16"	2 1/8"

MASTER SERIES (1/2" Square Drive)

F Double Broached (1/2" Square Drive)

Wrench Size	Stock Number	Outside Diameter		Overall Length
		Socket End	Handle End	
3/8"	P-412	23/32"	7/8"	1 1/2"
7/16"	P-414	13/16"	15/16"	1 1/2"
1/2"	P-416	29/32"	1"	1 1/2"
9/16"	P-418	1"	1 1/8"	1 1/2"
5/8"	P-420	1 7/16"	1 3/16"	1 1/2"
11/16"	P-422	1 13/16"	1 1/4"	1 1/2"
3/4"	P-424	1 5/8"	1 3/8"	1 1/2"
13/16"	P-426	1 7/8"	1 1/2"	1 1/2"
15/16"	P-428	1 9/16"	1 1/2"	1 1/2"
1"	P-432	1 23/32"	1 3/4"	1 3/4"

MASTER SERIES (1/2" Sq. Dr.) Single Broached Hex. Sockets

Wrench Size	Outside Diameter		D DEEP TYPE		E STD TYPE	
	Socket End	Handle End	Stock No.	Overall Length	Stock No.	Overall Length
3/8"	5/8"	7/8"	SP-120	3 1/4"	P-120B	11 1/2"
7/16"	23/32"	7/8"	SP-140	3 1/4"	P-140B	11 1/2"
1/2"	25/32"	15/16"	SP-160	3 1/4"	P-160B	11 1/2"
9/16"	7/8"	15/16"	SP-180	3 1/4"	P-180	11 1/2"
5/8"	29/32"	1"	—	—	P-190	11 1/2"
11/16"	31/32"	1"	SP-200	3 1/4"	P-200	11 1/2"
3/4"	1 1/16"	1 1/16"	SP-220	3 1/4"	P-220	11 1/2"
25/32"	1 1/8"	1 1/8"	SP-240	3 1/4"	P-240	11 1/2"
13/16"	1 1/4"	1 1/4"	—	—	P-250	11 1/2"
7/8"	1 1/2"	1 1/2"	SP-260	3 1/4"	P-260	11 1/2"
15/16"	1 5/8"	1 5/8"	SP-280	3 1/2"	P-280	11 1/2"
1"	1 3/4"	1 3/4"	SP-300-1/2	3 1/2"	P-300-1/2	13 3/4"
1 1/16"	1 7/8"	1 7/8"	SP-320-1/2	3 1/2"	P-320-1/2	13 3/4"
			—	—	P-340-1/2	2"

FERRET SERIES (3/8" Sq. Drive) FLEXOCKETS

Wrench Size	Stock No.	Outside Diameter		Overall Length
		Socket End	Handle End	
3/8"	IMBF-12A	9/16"	3/4"	2"
7/16"	IMBF-14A	9/16"	3/4"	2"
1/2"	IMBF-16A	23/32"	3/4"	2 1/8"
9/16"	IMBF-18A	13/16"	3/4"	2 1/8"
5/8"	IMBF-20A	29/32"	3/4"	2 3/16"

EXTENSIONS

K POWER TYPE

Stock No.	Square Drive	Over-all Lgth.
▲ PF-2	3/8"	3"
▲ PF-6	3/8"	6"
▲ PF-11	3/8"	12"
▲ PS-2	1/2"	2"
▲ PS-6	1/2"	5"
▲ PS-12	1/2"	10"
L-105	1 1/2"	10"
L-205	1 1/2"	20"

J MAGNETIC SOCKETS FOR SELF-TAPPING SCREWS

Powerful Alnico magnet imbedded in the socket holds flat headed self-tapping screws securely and makes it easy to insert and install them. Also very useful for starting or removing nuts and bolts.

SINGLE HEX			Out side Dia.	Magnet Depth	Overall Length	Stock No. Replacement Socket Less Magnet
Wrench Size	Square Drive	Stock No.				
1/4"	1/4"	MGM-8C	7/16"	3/32"	7/8"	MGM-8C-1
1/4"	1/4"	MGM-8TA	25/64"	3/32"	7/8"	MGM-8TA-1
5/16"	1/4"	MGM-10C	7/16"	3/32"	7/8"	MGM-10C-1
3/8"	1/4"	MGM-12C	9/16"	1/8"	15/16"	MGM-12C-1
7/16"	1/4"	MGM-14C	11/16"	9/64"	15/16"	MGM-14C-1
5/16"	3/8"	MFIM-101	15/32"	3/32"	1 1/16"	MFIM-101-1
3/8"	3/8"	MFIM-121	17/32"	1/8"	1 1/16"	MFIM-121-1
3/8"	3/8"	MSFIM-121	17/32"	1/8"	1 1/16"	MSFIM-121-1
7/16"	3/8"	MFIM-141	5/8"	9/64"	1 1/16"	MFIM-141-1
1/2"	3/8"	MFIM-161	23/32"	5/32"	1 1/16"	MFIM-161-1
9/16"	3/8"	MFIM-181	7/8"	5/32"	1 1/16"	MFIM-181-1
7/16"	1/2"	MPK-141A	11/16"	9/64"	1 1/2"	MPK-141A-1
1/2"	1/2"	MPK-161A	25/32"	5/32"	1 1/2"	MPK-161A-1
9/16"	1/2"	MPK-181A	7/8"	5/32"	1 1/2"	MPK-181A-1

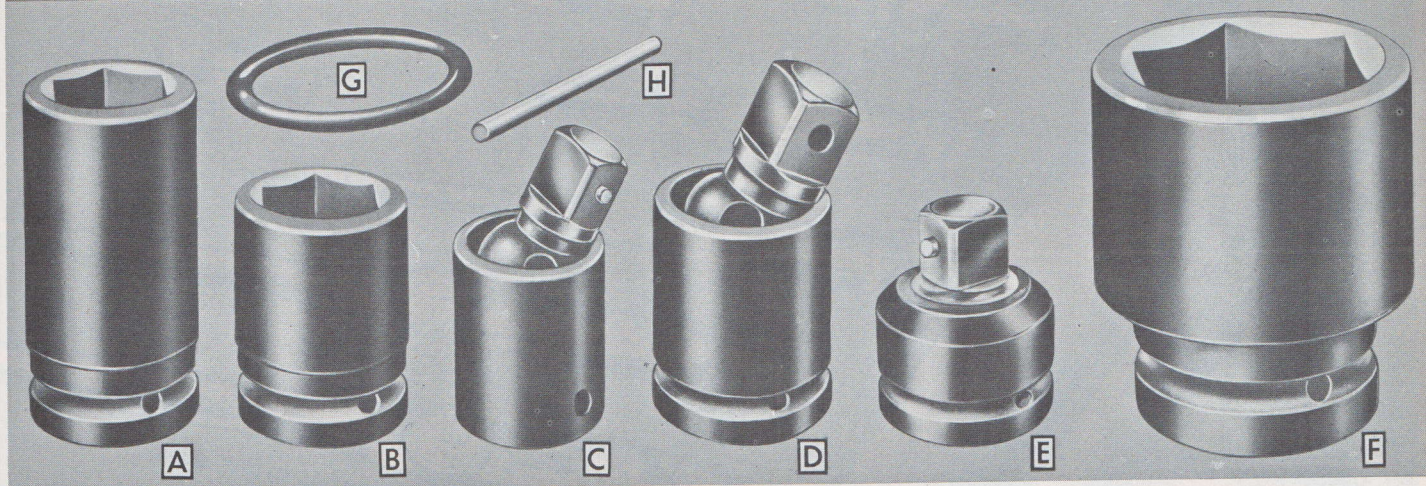
L IMPACT TYPE

Stock No.	Square Drive	Over-all Lgth.
▲ IM-62A	3/4"	7"
IM-92A	3/4"	10"
▲ IM-122A	3/4"	13"
▲ IM-63	1"	7"
▲ IM-123	1"	13"

H SOCKETS FOR SELF-TAP SCREWS

SINGLE HEX			O. D. Socket End	Depth of Broach	Overall Length
Wrench Size	Square Drive	Stock Number			
5/16"	3/8"	FIM-100	17/32"	3/16"	7/8"
3/8"	3/8"	FIM-120	5/8"	7/32"	7/8"
7/16"	3/8"	FIM-140	45/64"	1/4"	7/8"
1/2"	3/8"	FIM-160	51/64"	9/32"	7/8"
3/8"	1/2"	PK-121	5/8"	7/32"	1 1/2"
7/16"	1/2"	PK-141	45/64"	7/32"	1 1/2"
1/2"	1/2"	PK-161	25/32"	1/4"	1 1/2"
9/16"	1/2"	PK-181	7/8"	11/32"	1 1/2"

POWER NUT RUNNERS AND IMPACT WRENCHES



HEAVY DUTY INDUSTRIAL IMPACT SOCKETS

▲ 3/4" Square Drive—Single Hexagon Broached

Wrench Size	Diameter		A DEEP TYPE		B STANDARD TYPE	
	Socket End	Handle End	Stock No.	Overall Length	Stock No.	Overall Length
9/16"	1"	1 5/8"		3 1/4"	IM-182	1 3/4"
5/8"	1 1/8"	1 5/8"	SIM-202	3 1/4"	IM-202	1 3/4"
1 1/16"	1 1/2"	1 5/8"	SIM-222	3 1/4"	IM-222	1 3/4"
3/4"	1 3/4"	1 5/8"	SIM-242	3 1/4"	IM-242	1 3/4"
13/16"	1 7/8"	1 5/8"	SIM-262	3 1/4"	IM-262	1 7/8"
7/8"	1 5/8"	1 5/8"	SIM-282	3 1/4"	IM-282	1 7/8"
15/16"	1 5/8"	1 5/8"	SIM-302	3 1/4"	IM-302	1 7/8"
1"	1 5/8"	1 5/8"	SIM-322	3 1/4"	IM-322	2"
1 1/16"	1 11/16"	1 5/8"	SIM-342	3 1/4"	IM-342	2"
1 1/8"	1 3/4"	1 5/8"	SIM-362	3 1/2"	IM-362	2 1/8"
1 1/4"	2"	1 3/4"	SIM-402	3 1/2"	IM-402	2 1/8"
1 5/16"	2 1/16"	1 3/4"	IM-422	3 1/2"	IM-422	2 1/4"
1 3/8"	2 1/8"	1 3/4"	SIM-442	3 1/2"	IM-442	2 1/4"
1 1/2"	2 1/4"	1 3/4"	SIM-462	3 1/2"	IM-462	2 1/4"
	2 3/8"	1 3/4"	SIM-482	3 1/2"	IM-482	2 1/4"

UNIVERSAL JOINTS

For Use on Impact Wrenches

Stock No.	Square Drive	Outside Diam.	Overall Length
▲C IMBF-8	3/8"	7/8"	1 41/64"
▲C IMB-8A	1/2"	1 1/16"	2 9/32"
▲D IMB-81	5/8"	1 1/2"	2 19/32"
▲D IMB-82	3/4"	1 3/4"	3 5/32"
▲D IMB-83	1"	2 3/8"	4 9/32"
▲D IMB-85	1 1/2"	3 1/2"	6"

E ADAPTORS

Power and Impact

Stock No.	Square Hole	Square Drive
IM-72	3/4"	1"
IM-124A	1"	3/4"
IM-35	1"	1 1/2"
IM-53	1 1/2"	1"

G SYNTHETIC RUBBER LOCKING RINGS

IM-182R Locking Ring for 3/4" square drive sockets

IM-243R Locking Ring for 1" square drive sockets up to and including SIM-463 and IM-463

IM-483R Locking Ring for 1" square drive sockets SIM-483 and IM-483 and larger

IM-445R Locking Ring for 1 1/2" square drive sockets

H LOCKING PINS

IM-182P Locking Pin for 3/4" square drive sockets

IM-243P Locking Pin for 1" square drive sockets up to and including SIM-463 and IM-463

IM-483P Locking Pin for 1" square drive sockets SIM-483 and IM-483 and larger

IM-445P Locking Pin for 1 1/2" square drive sockets

JUMBO INDUSTRIAL SOCKETS

(1 1/2" Square Drive)

See listing on page 38 of this catalog

EXTRA HEAVY DUTY INDUSTRIAL IMPACT SOCKETS

(1" Square Drive)—Single Hexagon

▲ STANDARD LENGTH TYPE

Wrench Size	Stock No.	Nose O.D.	Overall Length	Wrench Size	Stock No.	Nose O.D.	Overall Length
3/4"	IM-243	1 1/16"	2 1/4"	2 1/16"	IM-663	3"	3 1/4"
13/16"	IM-263	1 1/2"	2 1/8"	2 1/8"	IM-683	3 1/8"	3 1/4"
7/8"	IM-283	1 17/32"	2 1/8"	2 3/8"	IM-703	3 1/4"	3 1/2"
15/16"	IM-303	1 19/32"	2 1/8"	2 3/4"	IM-723	3 1/2"	3 1/2"
1"	IM-323	1 11/16"	2 5/16"	2 3/4"	IM-743	3 3/8"	3 1/2"
1 1/16"	IM-343	1 3/4"	2 5/16"	2 3/8"	IM-763	3 1/2"	3 5/8"
1 1/8"	IM-363	1 13/16"	2 5/16"	2 3/8"	IM-783	3 1/2"	3 5/8"
1 1/4"	IM-383	1 7/8"	2 5/16"	2 3/8"	IM-803	3 5/8"	3 5/8"
1 1/2"	IM-403	2"	2 1/2"	2 3/8"	IM-823	3 3/4"	3 3/4"
1 5/8"	IM-423	2 1/16"	2 1/2"	2 3/8"	IM-843	3 3/4"	3 3/4"
1 3/4"	IM-443	2 1/8"	2 1/2"	2 3/8"	IM-863	3 7/8"	3 7/8"
1 7/8"	IM-463	2 1/4"	2 5/8"	2 3/8"	IM-883	3 7/8"	3 7/8"
2"	IM-483	2 3/8"	2 3/4"	2 3/8"	IM-903	4"	4"
2 1/8"	IM-503	2 3/8"	2 3/4"	2 3/8"	IM-923	4"	4"
2 1/4"	IM-523	2 1/2"	2 3/4"	2 3/8"	IM-943	4 1/8"	4 1/8"
2 1/2"	IM-543	2 3/8"	2 7/8"	2 3/8"	IM-963	4 1/8"	4 1/8"
2 3/4"	IM-563	2 5/8"	2 7/8"	2 3/8"	IM-1003	4 3/8"	4 3/8"
2 5/8"	IM-583	2 3/4"	3"	2 3/8"	IM-1043	4 1/2"	4 3/8"
2 7/8"	IM-603	2 3/4"	3"	2 3/8"	IM-1123	4 3/4"	4 3/8"
3"	IM-623	2 7/8"	3"	2 3/8"	IM-1163	5"	4 3/4"
3 1/4"	IM-643	3"	3 1/4"				

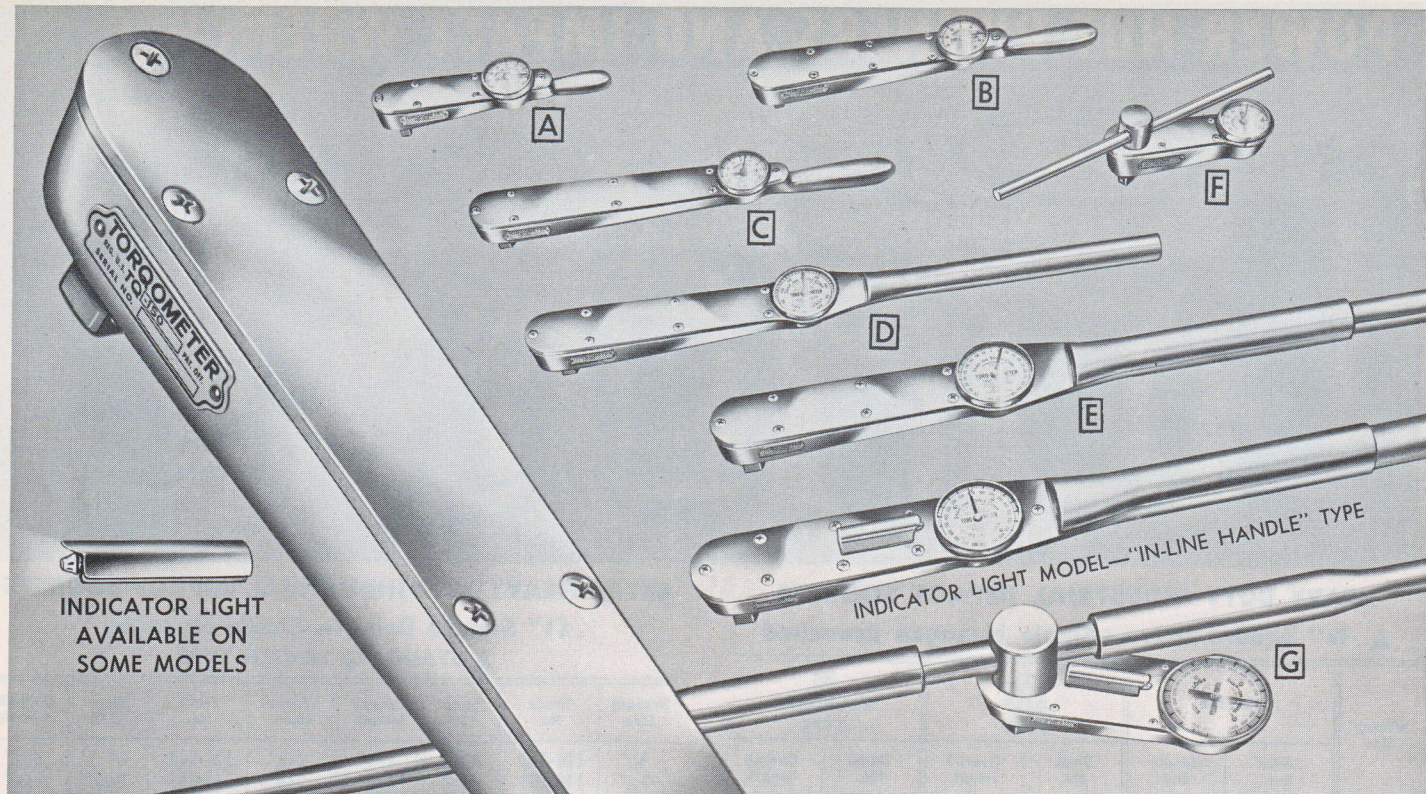
▲ (1" Square Drive) Single Hexagon DEEPTYPE—Not Illustrated

Wrench Size	Stock No.	Nose O.D.	Overall Length	Wrench Size	Stock No.	Nose O.D.	Overall Length
7/8"	SIM-283	1 17/32"	3"	1 3/4"	SIM-563	2 5/8"	3 5/8"
1"	SIM-323	1 11/16"	3"	1 13/16"	SIM-583	2 3/4"	3 7/8"
1 1/16"	SIM-343	1 3/4"	3"	1 7/8"	SIM-603	2 3/4"	3 7/8"
1 1/8"	SIM-363	1 13/16"	3"	1 15/16"	SIM-623	2 7/8"	4"
1 1/4"	SIM-383	1 7/8"	3"	2"	SIM-643	3"	4 1/8"
1 1/2"	SIM-403	2"	3 1/4"	2 1/16"	SIM-663	3"	4 1/8"
1 5/8"	SIM-423	2 1/16"	3 1/4"	2 1/8"	SIM-683	3 1/8"	4 1/8"
1 3/4"	SIM-443	2 1/8"	3 1/4"	2 3/16"	SIM-703	3 1/4"	4 3/8"
1 7/8"	SIM-463	2 1/4"	3 1/4"	2 1/4"	SIM-723	3 3/4"	4 3/8"
2"	SIM-483	2 3/8"	3 1/2"	2 1/4"	SIM-743	3 3/8"	4 3/8"
2 1/8"	SIM-503	2 3/8"	3 1/2"	2 3/8"	SIM-763	3 1/2"	4 3/8"
2 1/4"	SIM-523	2 1/2"	3 5/8"	2 3/8"	SIM-823	3 3/4"	4 7/8"
2 1/2"	SIM-543	2 3/8"	3 5/8"	2 3/4"	SIM-883	3 7/8"	5 1/8"

SPECIAL NOTICE

We cannot show our complete line of industrial type wrenches and attachments in this catalog. Industrial users are invited to write for a copy of the current SNAP-ON Industrial Catalog.

Note: The industrial tools listed on these two pages are not guaranteed against breakage or wear but are guaranteed against defects in material or workmanship.



Superior Features Make Torqometers Your Best Tension Wrench Buy

A SNAP-ON "Torqometer" is truly a precision gauge. Properly used to tighten bolts and studs to pre-determined tensions it will help eliminate faulty conditions and undue wear caused by mechanical distortion.

Even veteran mechanics cannot be expected to guess correct bolt tensions... or estimate even close to uniform accuracy where a series of bolts must be tightened. But with a SNAP-ON "Torqometer" the most inexperienced worker can hit the specified bolt torque every time... right to the correct inch or foot pound... and do it swiftly and confidently. For accuracy there is no substitute for a "Torqometer" for uniform tightening of threaded parts.

Simply adjust dial to bolt tension required and tighten bolt till the pointer reaches zero or the bulb on a light indicator model flashes.

Slender design permits use of the tool in very close working quarters and, when used with a ratchet adaptor, the "Torqometer" will easily handle jobs where handle movement is limited.

The square drive torque plug is welded to the steel top plate which also supports the dial mechanism and the thick polished aluminum housing provides a protective cover.

• **LIGHT WEIGHT**—Well-balanced streamlined design for ease of operation.

• **TORQUE MEASURING PRINCIPLE**—SNAP-ON "Torqometers" determine bolt tension by measuring the amount of twist (torque) developed in a specially heat treated alloy steel plug within the instrument as bolt turning pressure is applied.

• **FRICTION-FREE OPERATION**—Floating connecting beam between torque plug and dial mechanism has no bearing points and consequently no friction drag. This floating beam construction together with the watch-like precision of the dial mechanism renders the "Torqometer" practically "friction-free."

the
right tension
as easy as
telling time

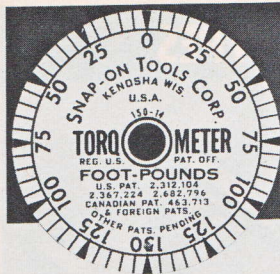
THE *Snap-on*
TORQOMETER® is
Accurate
Dependable
Sturdy

- **EXTREME SENSITIVENESS**—The applied torque is amplified approximately 500 times on the dial for hairline accuracy in torque measurement.
- **FOR RIGHT, AND LEFT HAND THREADS**—Dial pointer works both ways on the dial.
- **SHOCK-PROOF DIAL MECHANISM**—With indicating hand that may be pre-set to any desired position on the clear view dial located at the handle end.
- **BLACK CALIBRATIONS**—Against a white dial background make the "Torqometer" easy to read.
- **BUILT-IN SAFETY FACTORS**—Constructed to withstand an overload beyond dial capacity of each model far greater than the average mechanic is apt to apply. A slip clutch protects pointer mechanism.
- **CONSISTENT READINGS**—The accuracy of the "Torqometer" is not affected by the way it is held. Pull on the end of the handle or close to the dial and the reading remains the same. This is not true of all tension wrenches.
- **LIGHT INDICATOR MODELS**—For use in locations where it is difficult to read the dials. Light operates when pre-set dial reading is reached.

U.S. Patent Number 2,715-333 and other patents pending. Canadian Patent Number 463,713. Also patented in foreign countries.

BACKED BY THIS GUARANTEE

SNAP-ON "Torqometers" are thoroughly tested and inspected before leaving the factory and warranted to be in perfect working condition... we will repair or replace free of charge any parts that prove defective within 90 days from date of delivery, or repair at nominal service charge any part which (in our judgment) has been misused or damaged, providing no other repair work has been performed by others.

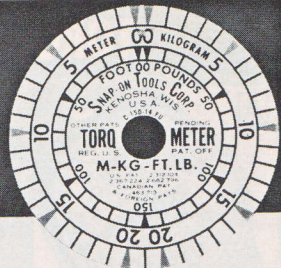


Snap-on TORQOMETERS

AVAILABLE WITH ENGLISH OR ENGLISH-METRIC DIALS

DIAL AT LEFT HAS
ENGLISH CALIBRATIONS

DIAL AT RIGHT HAS COMBINATION
ENGLISH AND METRIC CALIBRATIONS



MODELS WITH ENGLISH CALIBRATION DIALS

IN-LINE HANDLE MODELS—Types A B C D and E							SQUARE DRIVE & CAPACITY			"T" HANDLE MODELS—Types F and G				
Model Type	* Overall Length	Standard Model	Indicator Light Model	Slip-Pointer Model	Follow-Up Pointer Model	Dual-Dial Model	Square Drive	Dial Calibration		Standard "T" Model Type F	Indicator Light Model Type F G	Slip-Pointer Model Type F	Follow-Up Pointer Model Type F	Handle Length
								Maximum Range	*Divisions					
A	9"	TQ-1Z	TQ-1ZL	TQ-1Z-SP	TQ-1Z-FU	TQD-1Z	1/4"	240 in. oz.	10 in. oz.	TQ-1ZT	—	—	TQ-1ZT-FU	9"
A	9"	TQ-1	TQ-1L	TQ-1-SP	TQ-1-FU	TQD-1	1/4"	15 in. lbs.	1/2 in. lbs.	TQ-1T	—	—	TQ-1T-FU	9"
A	9"	TQ-3	TQ-3L	TQ-3-SP	TQ-3-FU	TQD-3	1/4"	30 in. lbs.	1 in. lbs.	TQ-3T	—	—	TQ-3T-FU	9"
A	9"	TQ-4	TQ-4L	TQ-4-SP	TQ-4-FU	TQD-4	1/4"	50 in. lbs.	2 in. lbs.	TQ-4T	—	—	TQ-4T-FU	9"
A	9"	TQ-6	TQ-6L	TQ-6-SP	TQ-6-FU	TQD-6	1/4"	75 in. lbs.	1 in. lbs.	TQ-6T	—	—	TQ-6T-FU	9"
A	9"	TQ-8	TQ-8L	TQ-8-SP	TQ-8-FU	TQD-8	3/8"	100 in. lbs.	10 in. lbs.	TQ-8T	—	TQ-8T-SP	TQ-8T-FU	9"
A	9"	TQ-12B	TQ-12BL	TQ-12B-SP	TQ-12B-FU	TQD-12B	3/8"	150 in. lbs.	5 in. lbs.	TQ-12T	—	TQ-12T-SP	TQ-12T-FU	9"
A	9"	TQ-12BF	TQ-12BFL	TQ-12BF-SP	TQ-12BF-FU	TQD-12BF	3/8"	12 ft. lbs.	1/2 ft. lbs.	TQ-12TF	—	TQ-12TF-SP	TQ-12TF-FU	9"
A	9"	TQ-16	TQ-16L	TQ-16-SP	TQ-16-FU	TQD-16	3/8"	200 in. lbs.	10 in. lbs.	TQ-16T	—	—	TQ-16T-FU	9"
A	9"	TQ-20	TQ-20L	TQ-20-SP	TQ-20-FU	TQD-20	3/8"	250 in. lbs.	10 in. lbs.	TQ-20T	—	—	TQ-20T-FU	9"
A	9"	TQ-25	TQ-25L	TQ-25-SP	TQ-25-FU	TQD-25	3/8"	300 in. lbs.	5 in. lbs.	TQ-25T	—	TQ-25T-SP	TQ-25T-FU	9"
A	9"	TQ-25F	TQ-25FL	TQ-25F-SP	TQ-25F-FU	TQD-25F	3/8"	25 ft. lbs.	1/2 ft. lbs.	TQ-25TF	—	TQ-25TF-SP	TQ-25TF-FU	9"
B	13 1/4"	TQ-50A	TQ-50AL	TQ-50A-SP	TQ-50A-FU	TQD-50A	3/8"	600 in. lbs.	20 in. lbs.	TQ-50T	—	TQ-50T-SP	TQ-50T-FU	9"
B	13 1/4"	TQ-50AF	TQ-50AFL	TQ-50AF-SP	TQ-50AF-FU	TQD-50AF	3/8"	50 ft. lbs.	1 ft. lbs.	TQ-50TF	—	TQ-50TF-SP	TQ-50TF-FU	9"
B	13 1/4"	TQ-51A	TQ-51AL	TQ-51A-SP	TQ-51A-FU	TQD-51A	1 1/2"	600 in. lbs.	20 in. lbs.	TQ-51T	—	TQ-51T-SP	TQ-51T-FU	9"
B	13 1/4"	TQ-51AF	TQ-51AFL	TQ-51AF-SP	TQ-51AF-FU	TQD-51AF	1 1/2"	50 ft. lbs.	2 ft. lbs.	TQ-51TF	—	TQ-51TF-SP	TQ-51TF-FU	9"
C	16 1/2"	TQ-100	TQ-100L	TQ-100-SP	TQ-100-FU	TQD-100	1 1/2"	100 ft. lbs.	2 ft. lbs.	TQ-100T	—	TQ-100T-SP	TQ-100T-FU	18"
C	16 1/2"	TQ-150	TQ-150L	TQ-150-SP	TQ-150-FU	TQD-150	1 1/2"	150 ft. lbs.	5 ft. lbs.	TQ-150T	—	TQ-150T-SP	TQ-150T-FU	18"
C	16 1/2"	TQ-151	TQ-151L	TQ-151-SP	TQ-151-FU	TQD-151	1 1/2"	1800 in. lbs.	60 in. lbs.	TQ-151T	—	TQ-151T-SP	TQ-151T-FU	24"
C	24"	TQ-175	TQ-175L	TQ-175-SP	TQ-175-FU	TQD-175	1 1/2"	175 ft. lbs.	5 ft. lbs.	TQ-175T	—	—	TQ-175T-FU	24"
C	24"	TQ-200	TQ-200L	TQ-200-SP	TQ-200-FU	TQD-200	1 1/2"	200 ft. lbs.	5 ft. lbs.	TQ-200T	—	TQ-200T-SP	TQ-200T-FU	24"
C	24"	TQ-250	TQ-250L	TQ-250-SP	TQ-250-FU	TQD-250	1 1/2"	250 ft. lbs.	10 ft. lbs.	TQ-250T	—	TQ-250T-SP	TQ-250T-FU	24"
C	24"	TQ-251	TQ-251L	TQ-251-SP	TQ-251-FU	TQD-251	1 1/2"	3000 in. lbs.	100 in. lbs.	TQ-251T	—	TQ-251T-SP	TQ-251T-FU	24"
D	24"	TQ-252	TQ-252L	TQ-252-SP	TQ-252-FU	TQD-252	3/4"	250 ft. lbs.	10 ft. lbs.	TQ-252T	—	TQ-252T-SP	TQ-252T-FU	24"
D	32"	TQ-300	TQ-300L	TQ-300-SP	TQ-300-FU	TQD-300	3/4"	300 ft. lbs.	10 ft. lbs.	TQ-300T	—	TQ-300T-SP	TQ-300T-FU	36"
D	32"	TQ-352B	TQ-352BL	TQ-352B-SP	TQ-352B-FU	TQD-352B	3/4"	350 ft. lbs.	10 ft. lbs.	TQ-352T	—	TQ-352T-SP	TQ-352T-FU	36"
D	32"	TQ-353	TQ-353L	TQ-353-SP	TQ-353-FU	TQD-353	3/4"	4200 in. lbs.	120 in. lbs.	TQ-353T	—	TQ-353T-SP	TQ-353T-FU	36"
D	32"	TQ-420	TQ-420L	TQ-420-SP	TQ-420-FU	TQD-420	3/4"	420 ft. lbs.	10 ft. lbs.	TQ-420T	—	TQ-420T-SP	TQ-420T-FU	36"
D	42"	TQ-502	TQ-502L	TQ-502-SP	TQ-502-FU	TQD-502	3/4"	500 ft. lbs.	10 ft. lbs.	TQ-502T	—	TQ-502T-SP	TQ-502T-FU	42"
E	42"	TQ-601	TQ-601L	TQ-601-SP	TQ-601-FU	TQD-601	3/4"	7200 in. lbs.	120 in. lbs.	TQ-601T	—	TQ-601T-SP	TQ-601T-FU	42"
E	42"	TQ-602A	TQ-602AL	TQ-602A-SP	TQ-602A-FU	TQD-602A	3/4"	600 ft. lbs.	10 ft. lbs.	TQ-602T	—	TQ-602T-SP	TQ-602T-FU	42"
E	66 1/2"	TQ-803	TQ-803L	TQ-803-SP	TQ-803-FU	TQD-803	1"	800 ft. lbs.	20 ft. lbs.	TQ-803T	—	—	TQ-803T-FU	66"
E	66 1/2"	TQ-1003A	TQ-1003AL	TQ-1003-SP	TQ-1003-FU	TQD-1003A	1"	1000 ft. lbs.	25 ft. lbs.	—	—	—	TQ-1003T-FU	66"
E	79"	—	—	—	—	—	1"	1500 ft. lbs.	20 ft. lbs.	—	—	—	—	69"
E	79"	—	TQ-2005L	—	—	—	1 1/2"	2000 ft. lbs.	40 ft. lbs.	—	—	—	—	69"
E	138"	—	TQ-3005L	—	—	—	1 1/2"	3000 ft. lbs.	50 ft. lbs.	—	—	—	—	140"
E	—	—	—	—	—	—	1 1/2"	4000 ft. lbs.	50 ft. lbs.	—	—	—	—	151"

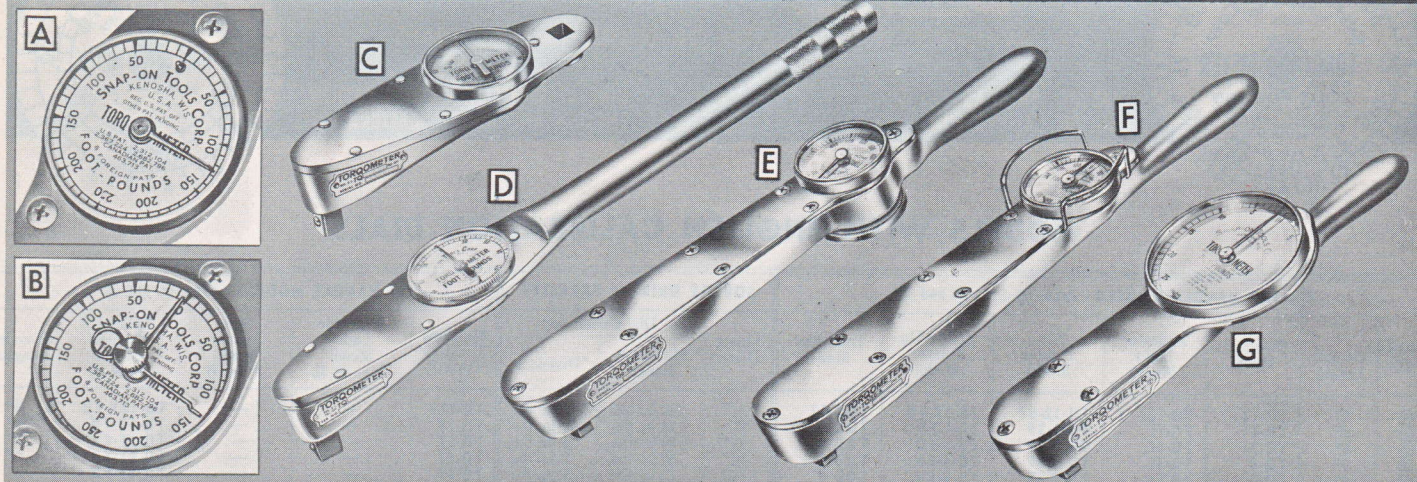
*Includes the removable handles on E models

MODELS WITH COMBINATION ENGLISH AND METRIC CALIBRATED DIALS

IN LINE HANDLE MODELS—Types A B C D and E							SQUARE DRIVE SIZE AND CAPACITY				"T" HANDLE MODELS—Types F and G				
Model Type	* Overall Length	Standard Model	Indicator Light Model	Slip-Pointer Model	Follow-Up Pointer Model	Dual-Dial Model	Sq. Drive	Dial Calibration				Standard "T" Model Type F	Indicator Light Model Type F G	Follow-Up Pointer Model Type F	Handle Length
								Metric		English					
								Max. Range	Divisions	Max. Range	Divisions				
A A A	9" 9" 9"	TQC-1 TQC-3 TQC-6	TQC-1L TQC-3L TQC-6L	TQC-1-SP TQC-3-SP TQC-6-SP	TQC-1-FU TQC-3-FU TQC-6-FU	TQCD-1 TQCD-3 TQCD-6	1 1/4" 1 1/4" 1 1/4"	15 cm. kgs. 35 cm. kgs. 90 cm. kgs.	1 cm. kgs. 1 in. lbs. 3 cm. kgs.	15 in. lbs. 30 in. lbs. 75 in. lbs.	1 in. lb. 1 in. lb. 5 in. lbs.	TQC-1T TQC-3T TQC-6T	— — —	TQC-1T-FU TQC-3T-FU TQC-6T-FU	9" 9" 9"
A A B	9" 9" 13 1/4"	TQC-12B TQC-25 TQC-50	TQC-12L TQC-25L TQC-50L	TQC-12-SP TQC-25-SP TQC-50-SP	TQC-12-FU TQC-25-FU TQC-50-FU	TQCD-12 TQCD-25 TQCD-50	3 3/8" 3 3/8" 3 3/8"	180 cm. kgs. 300 cm. kgs. 7 m. kgs.	6 cm. kgs. 10 cm. kgs. 20 cm. kgs.	150 in. lbs. 25 ft. lbs. 600 in. lbs.	5 in. lbs. 20 in. lbs.	TQC-12T TQC-25T TQC-50T	— — —	TQC-12T-FU TQC-25T-FU TQC-50T-FU	9" 9" 9"
B C C D	13 1/4" 16 1/2" 24" 24"	TQC-51 TQC-150 TQC-175 TQC-250	TQC-51L TQC-150L TQC-175L TQC-250L	TQC-51-SP TQC-150-SP TQC-175-SP TQC-250-SP	TQC-51-FU TQC-150-FU TQC-175-FU TQC-250-FU	TQCD-51 TQCD-150 TQCD-175 TQCD-250	1 1/2" 1 1/2" 1 1/2" 1 1/2"	7 m. kgs. 20 m. kgs. 24 m. kgs. 35 m. kgs.	20 cm. kgs. 1 m. kg. 1 m. kg. 1 m. kg.	600 in. lbs. 150 ft. lbs. 175 ft. lbs. 250 ft. lbs.	20 in. lbs. 10 ft. lbs. 5 ft. lbs. 10 ft. lbs.	TQC-51T TQC-150T TQC-175T TQC-250T	— — — —	TQC-51T-FU TQC-150T-FU TQC-175T-FU TQC-250T-FU	9" 18" 24" 24"
D D D D E	24" 32" 32" 32" 42"	TQC-252 TQC-300 TQC-352B TQC-420 TQC-602A	TQC-252L TQC-300L TQC-352L TQC-420L TQC-602AL	TQC-252-SP TQC-300-SP TQC-352-SP TQC-420-SP TQC-602-SP	TQC-252-FU TQC-300-FU TQC-352-FU TQC-420-FU TQC-602-FU	TQCD-252 TQCD-300 TQCD-352 TQCD-420 TQCD-602	3 3/4" 3 3/4" 3 3/4" 3 3/4" 3 3/4"	35 m. kgs. 40 m. kgs. 50 m. kgs. 55 m. kgs. 80 m. kgs.	1 m. kgs. 1 m. kgs. 2 m. kgs. 1 m. kgs. 2 m. kgs.	250 ft. lbs. 300 ft. lbs. 350 ft. lbs. 420 ft. lbs. 600 ft. lbs.	10 ft. lbs. 10 ft. lbs. 15 ft. lbs. 10 ft. lbs. 20 ft. lbs.	TQC-252T TQC-300T TQC-352T TQC-420T TQC-602T	— F TQC-300TL F TQC-352TL F TQC-420TL F TQC-602TL	TQC-252T-FU TQC-300T-FU TQC-352T-FU TQC-420T-FU TQC-602T-FU	24" 36" 36" 36" 42"
E E E	66 1/2" 66 1/2" 79"	TQC-803 TQC-1003A —	TQC-803L TQC-1003AL TQC-1503AL	TQC-803-SP TQC-1003-SP —	TQC-803-FU TQC-1003-FU —	TQCD-803 TQCD-1003 TQCD-1503	1" 1" 1"	110 m. kgs. 140 m. kgs. 200 m. kgs.	2 m. kgs. 2 m. kgs. 10 m. kgs.	800 ft. lbs. 1000 ft. lbs. 1500 ft. lbs.	25 ft. lbs. 20 ft. lbs. 50 ft. lbs.	TQC-803T TQC-1003T —	F TQC-803TL F TQC-1003TL G TQC-1503TL	TQC-803T-FU TQC-1003T-FU —	66" 66" 69"
E E —	79" 138" —	— — —	TQC-2005L TQC-3005L —	— — —	— — —	— — —	1 1/2" 1 1/2" 1 1/2"	280 m. kgs. 400 m. kgs. 550 m. kgs.	10 m. kgs. 10 m. kgs. 10 m. kgs.	2000 ft. lbs. 3000 ft. lbs. 4000 ft. lbs.	100 ft. lbs. 100 ft. lbs. 100 ft. lbs.	— — —	G TQC-2005TL G TQC-3005TL G TQC-4005TL	— — —	69" 140" 151"

*Includes the removable handles on E models

TORQOMETERS ARE AVAILABLE IN MANY SPECIAL TYPES



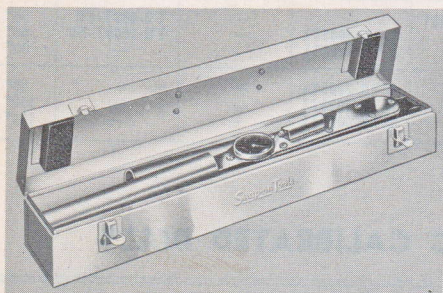
A SLIP-POINTER MODELS

Have a single needle which does not move until the torquing operation is completed. When pressure is released, the needle moves to register the exact amount of torque applied, reading is retained until the dial face is turned. These are used when it is necessary to know how tight a nut has been torqued. Quality control departments of assembly plants, etc., will find them extremely useful. See listings on page 47.

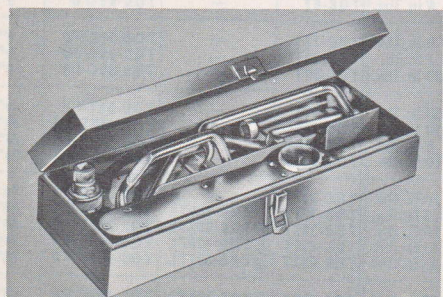
B FOLLOW-UP POINTER MODELS

Have two needles which move as one as long as pressure is applied. When pressure is released, one needle returns to zero while the "pointer" needle remains at reading attained. Pointer needle is re-set by a knurled screw mounted in the center of the dial face. This type of Torqometer is needed in many assembly plants. See listings on page 47.

METAL CASES FOR POPULAR SIZES OF TORQOMETERS



KRA-135 Metal Case. Holds any "In-Line Handle" Torqometer in the 175, 200, 250, 251, 252, 502, 601 and 602 series. It will not hold the "T" Handle Models. Thick felt pads hold tool in place when lid is closed. Case is 25½" x 4½" x 3¾" deep and has handle on top. Red enamel finish.



KRA-130 Metal Case. Holds any "In-Line Handle" Torqometer in the 100, 150, and 151 series. It will not hold the "T" Handle Models. Also has space for Ratchet Adaptor (page 26) and special torque adaptor wrenches or other tools. Case is 17¾" x 6½" x 3½" deep. Red enamel finish.

COMPACT-HEAD MODELS

Engineered to overcome clearance problems on many bolt tensioning jobs. The square drive is located very close to the end of the tool to prevent the housing extending past the diameter of the socket wrench. In addition, the housing has a slim-taper nose. These features permit access into very limited working areas.

The 2¼" diameter dial on ½" square drive models is calibrated in both directions from 0 to 150 ft. lbs. in 30, 6 and 3 ft. lb., divisions. Metric models TQAC-150 and TQEC-

150 also have calibrations 0-20 m.Kgs., in 1 m.Kg., divisions.

The dial on ¾" square drive models is calibrated from 0 to 150 inch lbs., in 5 inch lb. divisions. Metric model TQEC-12 also has calibrations 0-180 cm.Kgs., in 10 cm.Kg., divisions.

Any ½" square drive handle can be used to provide proper leverage with the C Type Torqometers. The readings are not affected by changing handle length.

Model Type	Square Drive	Standard Model	Slip-Pointer Model	Follow-Up Model	Metric Model	Overall Length
C	1½"	TQA-150	TQA-150-SP	TQA-150-FU	TQAC-150	71½"
D	3/8"	TQE-12	TQE-12-SP	TQE-12-FU	TQEC-12	
D	1/2"	TQE-150	TQE-150-SP	TQE-150-FU	TQEC-150	181½"

E DUAL DIAL MODELS

Have the standard dial, but in addition they also have another dial directly underneath so that the Torqometer can be read from either above or below.

F DIAL GUARDS

For protecting the dial and crystal. Must be factory fitted to Torqometer. Available only on special order.

G OVERSIZE DIALS

Can be put on the smaller Torqometers to enable the operator to read them easier under adverse conditions. They are also useful in vocational schools where a whole group can read the dial.

TORQOMETER TESTERS

Available on special order only, these test machines are necessary for aircraft factories, government or other plants having rigid torque requirements. The accuracy of any torque wrench can be checked on one of these testers and if a SNAP-ON Torqometer has become inaccurate from abuse or other reason, it can be recalibrated at a repair center. Each tester is guaranteed to be accurate within ¼ of one percent.

The six sizes available will test Torqometers having capacities of 0-25 ft. lbs., 0-75 ft. lbs., and 0-2000 ft. lbs. Special installation is required. Full information available to industrial and government procurement departments.

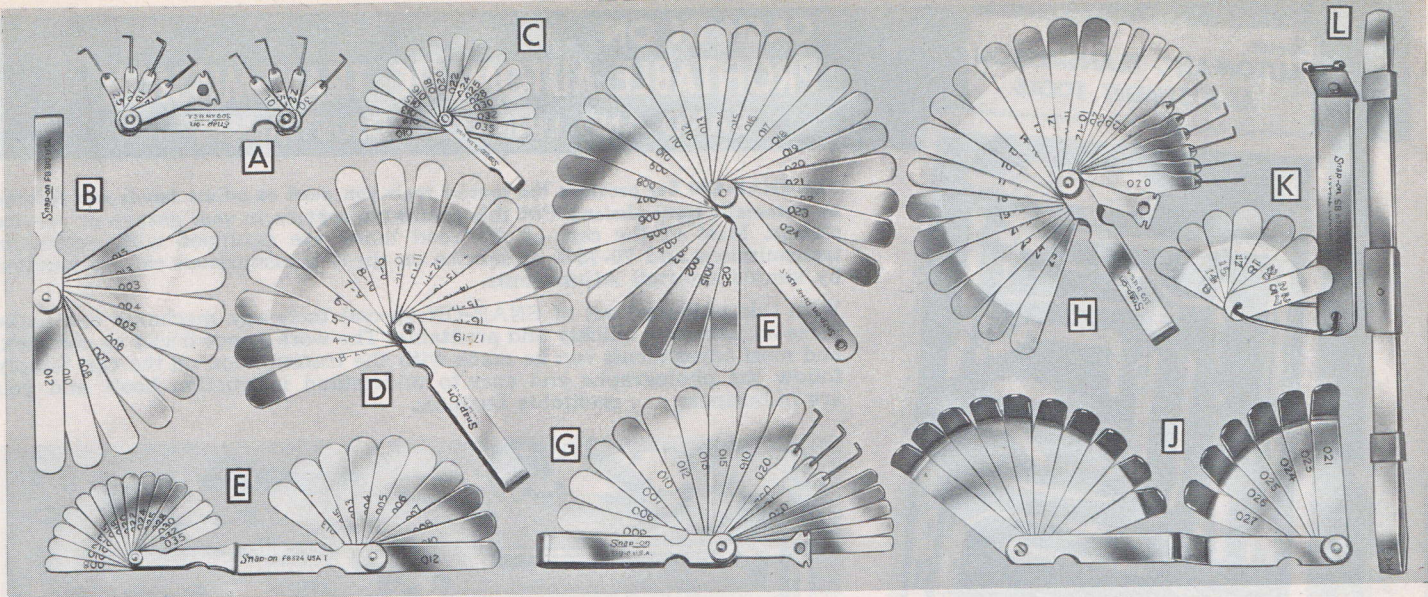
SNAP-ON TORQUE DRIVERS—¼" Square Drive

These SNAP-ON torque drivers give you precise control on jobs where screws or nuts must be tightened to exact tension such as on aviation, electrical and electronic, radio, television, radar, automotive, or any precision assembly work. Unit is extremely accurate regardless of position or manner of holding. Easily read dial is calibrated in inch-ounces and inch-pounds and may be adjusted right or left for convenient use. Dial on the standard models can be used in two ways: either set pointer at desired bolt tension and apply turning pressure, by means of comfortable plastic grip handle, to screw or nut until pointer reaches zero, or, set pointer at zero and apply pressure until pointer reaches desired calibration on scale. Slip-Pointer and Follow-up Pointer models function as described above.

The ¼ inch square drive allows driver to be used not only as a torque screw driver, but can be used with sockets, extensions and other attachments illustrated and described on pages 18 and 19.

Square Drive	Standard Model	Slip-Pointer Model	Follow-Up Pointer Model	Dial Calibration	
				Maximum Range	Divisions
1/4"	TQS-004	TQS-004-SP	TQS-004-FU	8 in. oz.	1/4 in. oz.
1/4"	TQS-008	TQS-008-SP	TQS-008-FU	16 in. oz.	1/2 in. oz.
1/4"	TQS-012	TQS-012-SP	TQS-012-FU	24 in. oz.	1/2 in. oz.
1/4"	TQS-025	TQS-025-SP	TQS-025-FU	48 in. oz.	1 in. oz.
1/4"	TQS-050	TQS-050-SP	TQS-050-FU	96 in. oz.	2 in. oz.
1/4"	TQS-1	TQS-1-SP	TQS-1-FU	192 in. oz.	4 in. oz.
1/4"	TQS-2	TQS-2-SP	TQS-2-FU	384 in. oz.	8 in. oz.
1/4"	TQS-2.5	TQS-2.5-SP	TQS-2.5-FU	480 in. oz.	12 in. oz.
1/4"	TQS-4	TQS-4-SP	TQS-4-FU	50 in. lbs.	2 in. lbs.
1/4"	TQS-6	TQS-6-SP	TQS-6-FU	75 in. lbs.	1 in. lbs.





FEELER GAUGES WITH BLADES OF IMPORTED SWEDISH TEMPERED STEEL

All blades are tested for accuracy. Gauges are equipped with knurled nut permitting user to slide out the required blade and lock it in position.

- ▲ **A** ★No. 309AW Aviation Wire Gap Gauge with eight sizes: .010, .012, .015, .018, .020, .022, .025, .030 and an electrode bender.

A ★No. FB-309W Automotive Wire Gap Gauge with eight sizes: .022, .025, .028, .030, .032, .035, .038, .040, and an electrode bender.

★Extra wires in any of above sizes are available at all times.

- B** ★FB-310 Standard Feeler Gauge. Ten blades 3 3/8" long in following thicknesses: .003, .004, .005, .006, .007, .008, .010, .012, .013 and .015.

C ★FB-316 Ignition and Spark Plug Gauge. sixteen fingers 1 3/4" long in the following thicknesses: .010, .012, .013, .015, .016, .017, .018, .020, .022, .024, .025, .026, .028, .030, .032, .035.

D ★FB-315 Step Feeler Gauge. Contains 15 "go, no-go" blades in the following sizes: .004-.006, .005-.007, .006-.008, .007-.009, .008-.010, .009-.011, .010-.012, .011-.013, .012-.014, .013-.015, .014-.016, .015-.017, .016-.018, .017-.019 and .018-.020.

E ★FB-326 Combination Feeler and Ignition Gauge. Ten 2 1/2" blades and sixteen 1 3/4" fingers. Blade thicknesses: .003, .004, .005, .006, .007, .008, .010, .012, .013, and .015. Fingers: .008, .010, .012, .013, .015, .016, .018, .020, .022, .024, .025, .026, .028, .030, .032, .035.

F ★FB-325 General Use Feeler Gauge. Contains the following 3 3/8" blades. Sizes—.0015, .002, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .021, .022, .023, .024, .025.

G ★FB-379 Chevrolet Feeler Gauge. Contains nine 3 3/8" blades in thicknesses of .006, .007, .008, .010, .012, .013, .015, .016, .020; five finger blades .016, .018, .019, .020, .022; three wire gap gauges .032, .035 and .040 and an electrode bender.

H ★FB-359 Ford Feeler Gauge. Contains four spark gap bent wire feelers .025, .028, .030, .035; two straight wire feelers for voltage regulator cutout .017 and .030; five ignition finger blades .013, .015, .016, .020, .025; fourteen step-ground blades .010-.012, .011-.013, .012-.014, .013-.015, .014-.016, .015-.017, .016-.018, .017-.019, .018-.020, .019-.021, .021-.023, .023-.025, .024-.026, .025-.027, and an electrode bender.

J ★GA-117 Bent Blade Feeler Gauge. Contains sixteen 3 3/4" blades, each with the end bent at a 45-degree angle. This minimizes danger of skinned knuckles or burns from hot manifold when checking overhead valve clearances. Sizes included are .009, .010, .011, .014, .015, .016, .017, .018, .019, .020, .021, .023, .024, .025, .026, and .027.

Extra Blades, Fingers and Wires

★We can supply extra blades, fingers or wires in regular thicknesses, in 3 3/8" or 2 1/2" lengths and in fingers 1 3/4" length.

K ★S-8678SB Stop Feeler Gauge Set. Consists of the S-8678-1 Offset Holder and the S-8678-3B set of blades. The handle is bent to clear exhaust manifolds... make adjustment more accurately as the blade is not bent to clear obstructions. Blades are inserted in the bent end and over a raised nub which engages the hole in the blade. Spring action holds the blade securely until released. Blades are 2" long with a 1/16" stepped end. Recommended for valve adjustment on Ford 6's and V-8's, Mercury and Ford trucks using Lincoln V-8 engine without hydraulic valve lifters.

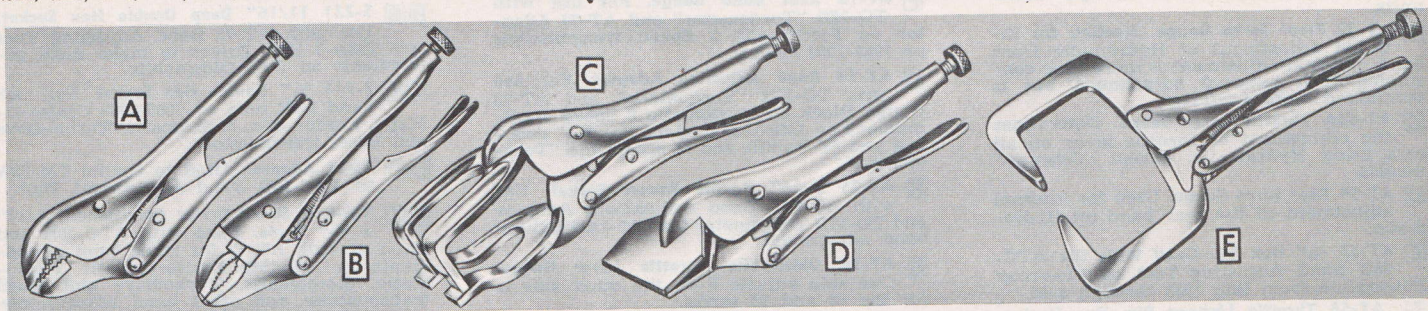
★S-8678-1 Offset Holder. Patent No. 2,817,151.

★S-8678-3B Set of Seven Step Blades. .008-.010, .014-.016, .015-.017, .017-.019, .018-.020, .020-.022, .025-.027.

L H-312 Feeler Gauge Holder. 10" long holder designed to hold two 12" feeler blades. Blades extend 2" or further if desired and are held firmly by two sliding end clamps. The two-blade feature is handy where intake and exhaust valve specifications differ or for use as a go and no-go gauge. The extra length available when the blades are extended is very useful in gauging parts that are otherwise difficult to reach.

12" Strips

★Following sizes of feeler gauge stock are available in 12" strips: .0015, .002, .003, .004, .005, .006, .007, .008, .009, .010, .011, .012, .013, .014, .015, .016, .017, .018, .019, .020, .022, and .026. Use in H-312. Holder listed above.



POWERFUL VISE-GRIP WRENCHES—CUTTERS—BENDERS

The Vise-Grip Wrenches have an "easy-release" handle mounted inside the handle. When the wrench is locked this lever contacts the locking lever. When the wrench is to be removed, a slight pressure on the release allows the jaws to spring to open position. Saves time, works easily in tight places.

A Standard Vise-Grip Wrenches. Indispensable for all types of work. Double action locks jaws on work, grips all shapes, will not slip. Works in close quarters, at any angle. Substitutes for vise, clamp, pipe wrench, etc.

▲ **VP-7R 7" Vise-Grip Wrench**

▲ **VP-10R 10" Vise Grip Wrench**

B Vise-Grip with Wire Cutter. Actually 8 tools in one—adjustable end wrench, thin nose plier, pipe wrench, portable toggle press, locking wrench, clamp, vise and bolt cutter. TON-GRIP permits tremendous grip on any object up to 1 1/4", and round work up to 1 1/2".

▲ **VP-7WR 7" Vise-Grip with Cutter.**

▲ **VP-10WR 10" Vise-Grip with Cutter.**

▲ **C** ★VP-9R Vise-Grip Welding Clamp. Parts are aligned almost instantly and held in position leaving both hands free. Special U-shaped jaws provide perfect visibility and working room. End screw provides quick jaw opening adjustment up to 1 1/2". Ideal for fender work, soldering, riveting, etc.

▲ **D** VP-8R Vise-Grip Bending Tool. Wide jaws make this Vise-Grip ideal for sheet metal work. Provide a solid grip for twisting, bending, shaping or pulling. Eliminates tiresome "hand-gripping". Clamps onto the work leaving hand free. Useful for upholstery work, material can be stretched without danger of unravelling. 8" long, jaws 3 3/4" wide, throat depth 1 3/4".

E VP-11R Vise-Grip "C" Clamp. Much faster than ordinary "C" clamp. End screw provides quick jaw opening adjustment up to 3 1/2" diameter. Align pieces to be clamped, place Vise-Grip in position—a squeeze of the hand locks it into position—hold awkward pieces easily.

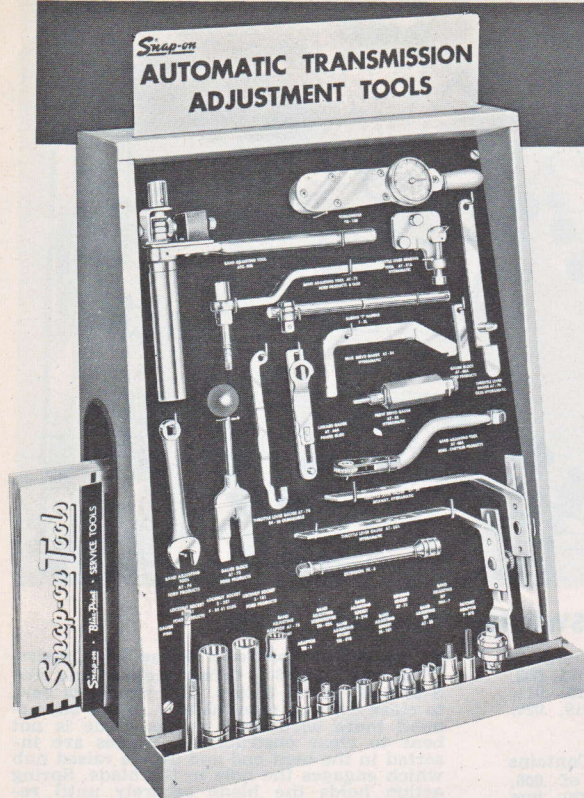
▲ Federal Specs: GGG-G-17 applies to the 309AW Wire Gauge; GGG-P-00471b applies to the Vise-Grip wrenches indicated by this symbol ▲.

CASH IN ON . . .

PROFITABLE AUTOMATIC TRANSMISSION BAND AND LINKAGE ADJUSTMENTS

This SNAP-ON Set provides the special tools you need to adjust bands and linkage on automatic transmissions. Put this profitable service in your garage or service station. Most of the cars on the road today are equipped with automatic transmissions and 70-75% of service on these transmissions can be handled by simple external adjustments.

With this universal set of SNAP-ON special tools any mechanic can make these adjustments quickly and profitably. The work is not tricky or complex, and most adjustments can be made with the transmission on the car. Simply follow the photographs and easy to understand instruction book, and you are in business . . . profitable business.



2033-AT-S Snap-on AUTOMATIC TRANSMISSION TOOL SET

Complete with the ASP-36B Display and Storage Stand as illustrated containing all the tools listed below. Stand consists of a metal frame and removable panel board and base block. Frame is finished in bright red enamel and has a sign at top to advertise that you are equipped to provide Automatic Transmission Adjustment. Panel board is finished in black, has hooks, clamps and outlines, plus description of tools in set for easiest, most accessible storage. Each tool has its own special place on the board and provides fast and easy "spotting" of needed tools—you can tell at a glance if a tool is missing. Future changes or additions to the set are accommodated by merely changing the panel and base blocks.

2033-AT Set. Above set without display stand.

Individual Tools

- A AT-51A Throttle Lever Bending Tool.** Used to align throttle lever on all Hydromatic units.
- B AT-52 Front Servo Gauge.** Needed for internal adjustment of Hydromatic front band. Internal adjustment is more time consuming than external adjustment, but is considered more accurate.
- C AT-53A Throttle Lever Gauge.** Determines the adjustment of throttle lever on all cars using Hydramatic, except "Jetaway" models.
- D AT-54 Rear Servo Gauge.** Used for internal adjustment of the rear band on Hydramatic.
- E AT-55 1/4" Hex Bit.** Used with the ATC-50B Band Adjusting Tool on Chevrolet Powerglide from late 1953 through 1962.
- F AT-58 Throttle Linkage Pin.** For Hydramatic on Kaiser, Willys, Lincoln (except 1955), Olds 1948-49, and Pontiac 1948-56.
- G AT-60A. 250" Gauge Block.** Required for precise adjustment of Fordomatic, Mercomatic and Cruise-O-Matic front bands.
- H AT-61 Throttle Linkage Pin.** For 1955-1962 V-8 Fordomatic.
- J AT-66A Throttle Linkage Adjustment Gauge.** Required for 6 and 8 cylinder Chevrolet Powerglide 1953-1962.
- K AT-68A Ratcheting Band Adjustment Adaptor.** Used with TQ-12B "Torqometer" on 1960-62 Fordomatic 2 speed transmissions, and on Powerflite and Torque-Flite transmissions of Chrysler products and on Warner Gear transmissions found on the various Ford products, including Fordomatic, Flash-O-Matic, Turbo-Drive, Flight-O-Matic and Mercomatic.

L AT-69 Throttle Lever Linkage Gauge. For use on Jetaway on 1956-1960 Oldsmobile and Flashaway on 1956-1957 Nash.

M AT-70 Throttle Lever Linkage Gauge. For use on 1954-1959 Oldsmobile Hydramatic equipped with Rochester 4 barrel carburetor.

N AT-71 Throttle Stop Bending Tool. Used with pressure gauge for making throttle linkage adjustments on 1958-1962 Ford Cruise-O-Matic by bending throttle lever internal stop (used when pressure reading is above manufacturer's specifications).

O AT-72 Band Adjusting Tool. For adjusting bands on 1958-1962 Ford Cruise-O-Matic and 1962 Olds F-85. Designed to overcome clearance problems. Use with TQ-12B "Torqometer" and socket attachments.

P AT-73 Rear Band Gauge. For use with TQ-12B "Torqometer" and AT-74 Adaptor on Fordomatic 2 Speed transmissions on 1959-1962 models.

Q AT-74 Band Adjusting Adaptor. For use with TQ-12B "Torqometer" and AT-73 Gauge Block on Fordomatic 2 Speed transmissions on 1959-1962 models. Has 9/16" open end and 3/8" handle end to accept the "Torqometer."

R AT-75 5/16" Double Square Socket. Use with AT-68A Band Adjustment Adaptor and TQ-12B Torqometer for 1960-1962 Valiant band adjustment.

S AT-76 Oldsmobile Throttle Lever Gauge. One side adjusts F-85, the other side is for the 88 and 98 series.

T ATC-50B Band Adjusting Tool with Automatic Counter. For front and rear band adjustments on Hydromatic, Dynaflo, Powerglide; rear band adjustments on Fordomatic and Mercomatic; front band adjustments on Powerflite. Counter mechanism counts the number of turns applied to the band adjustment screw on those transmissions where a specified number of turns is essential. Fordomatic, Mercomatic and Powerflite band adjustments are made by this tool used in conjunction with the TQ-12B "Torqometer."

U TQ-12B "Torqometer." Used to turn the central shaft of band adjusting tool when screw torque must be measured. Also used with AT-68A adaptor with AT-72 for 1958-62 Ford Cruise-O-Matic; and also used with AT-74 adaptor for 1959-1962 Fordomatic 2 Speed transmissions.

V F-5L Sliding "T" Bar. Used to turn the central shaft of the Band Adjusting Tool when screw turns must be counted.

W F-67B Ratchet Adaptor. Used with TQ-12B "Torqometer" and Band Adjusting Tool for Fordomatic and Mercomatic front band adjustments.

X F-310 5/16" Square Socket. Use with Band Adjusting Tool to turn most bands.

Y FS-101 5/16" Hex Socket. Use with Band Adjusting Tool for reverse band adjustments on Powerflite transmissions.

Z FX-6 Extension Bar. Provides clearance when adj. rear band of Powerflite.

A A S-181 9/16" Double Hex Socket. For front band lock nuts on 1955-1962 Cruise-O-Matic, Fordomatic, Mercomatic, Turbo-drive and Edsel transmissions.

B B S-221 11/16" Deep Double Hex Socket. Use with AT-72 Band Adjusting Tool and TMA-7 Hex Driver to make band adjustments on F-85 Oldsmobile.

C C S-241 3/4" Double Hex Socket. For rear band lock nuts on 1955-1962 Cruise-O-Matic, Fordomatic, Mercomatic, Turbo-drive and Edsel transmissions.

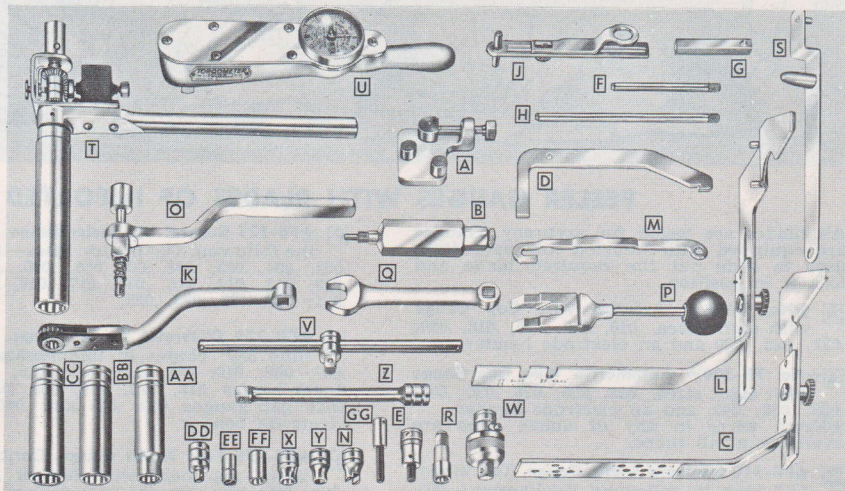
D D TM-1 Adaptor. Used to couple TM-83A to ATC-50B Band Adjustment Tool.

E E TM-83A Screw Driver Attachment, 1/32" x 3/8" Blade. Used with ATC-50B and TM-1 or with AT-72 for front band adjustments on 1955-1962 Cruise-O-Matic, Fordomatic, Mercomatic, Turbodrives and Edsel transmissions and other band adjustments.

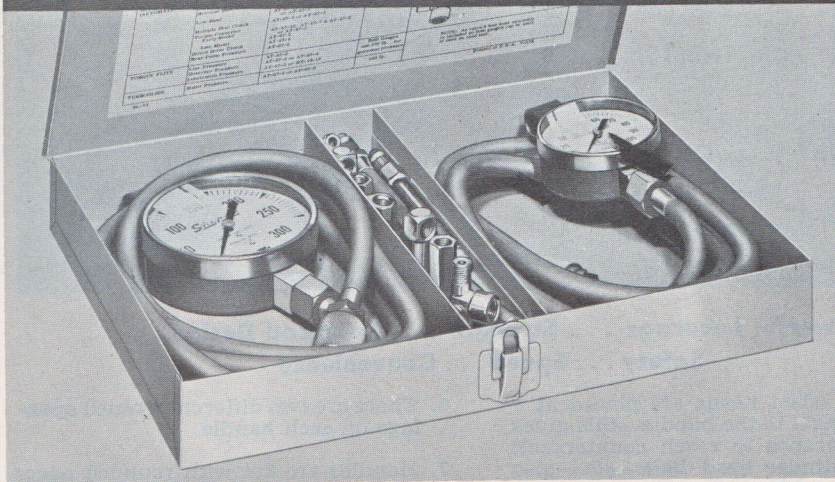
F F TM-410 5/16" Double Square Sockets. For rear band adjustments on 1955-1962 Cruise-O-Matic, Fordomatic, Mercomatic, Turbodrives and Edsel transmissions.

G G TMA-7 7/32" Hex Head Driver. Use with AT-72 Band Adjusting Tool and S-221 Socket for band adjustments on F-85 Oldsmobile.

GA-164 Instruction Manual. Over 300 pages of step-by-step, fully illustrated instructions for adjusting bands and linkages on all automatic transmissions. The easy to follow and understand instructions, together with several hundred photographs and illustrations, show how and where to use the tools. Complete instructions for pressure gauge tests and recommended specifications are also given. Does not deal with automatic transmission overhaul, but deals only with adjustments of bands and linkages.



AUTOMATIC TRANSMISSION OIL PRESSURE GAUGE SETS AND OIL SEAL DRIVERS AND PULLERS



AT-670-B Complete Automatic Oil Pressure Gauge Set consisting of all parts listed below in KRA-141 Metal Box.
AT-67-11A Small Gauge Assembly only.
KRA-141 Metal Box with cover clasp fasteners.

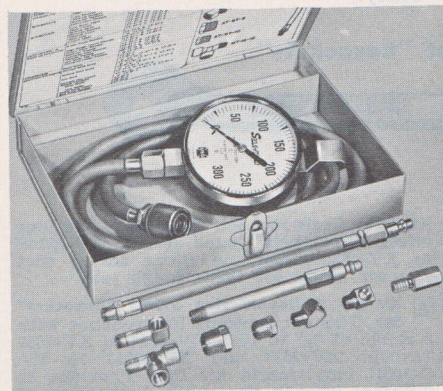
Stock No.	Description	Stock No.	Description
AT-67-1A	Oil Pressure Gauge, Hose and Quick Coupler Assembly (Zero to 300 p.s.i.)	AT-67-9	$\frac{1}{8}$ " Female x $\frac{3}{8}$ " Male Pipe Bushing
AT-67-2A	Flexible Adaptor	AT-67-10	$\frac{1}{8}$ " Female x $\frac{1}{4}$ " Male Pipe Bushing
AT-67-4A	Adaptor for Hydramatic	MT-14-10	"T" Fitting $\frac{1}{8}$ " Pipe
AT-67-6	Adaptor for Studebaker	AT-67-11A	Small Gauge Assembly, includes: Gauge, Hose and Quick Coupler (Zero to 100 p.s.i.)
AT-67-7	90 degree Street "L" ($\frac{1}{8}$ " Pipe)	AT-67-12	Adaptor for 1960 Ford throttle pressure linkage
AT-67-8	45 degree Street "L" ($\frac{1}{8}$ " Pipe)		

GAUGE SET FOR AUTOMATIC TRANSMISSION OIL PRESSURE

This set is a real time saver when checking automatic transmissions. With it you can check the oil pressure at critical points within the transmission and reveal inside troubles which cannot be corrected by band and linkage adjustments and thus save needless work. The gauge is also necessary for setting the linkage on certain transmissions. You can spot oil leaks, pressure leaks, faulty Servo pistons, clogged screens, etc. There is need for this gauge set on all automatic transmission work.

Large $3\frac{1}{2}$ " dial is calibrated from 0 to 300 PSI. Hook on back of gauge allows it to be hung leaving both hands free for adjustment, can also be hung on window during road test. Has 5' hose with quick coupler for fast inter-

change of adaptors. Three of the adaptors furnished have ends to fit quick coupler. Balance have ends to fit connections of different transmissions. A chart in the box shows combinations.



GAUGE SET FOR AUTOMATIC TRANSMISSION OIL, THROTTLE AND GOVERNOR PRESSURE

The large gauge checks oil pressures on virtually all automatic transmissions on the latest model cars, its $3\frac{1}{2}$ " dial is calibrated from 0 to 300 p.s.i. This is the gauge shown in the AT-671-B Set below.

The small gauge, calibrated from 0 to 100 p.s.i. permits throttle and governor pressure tests to be made as recommended on many of the 1957-62 automobiles. These pressures are too low for accurate readings to be taken on the larger gauge.

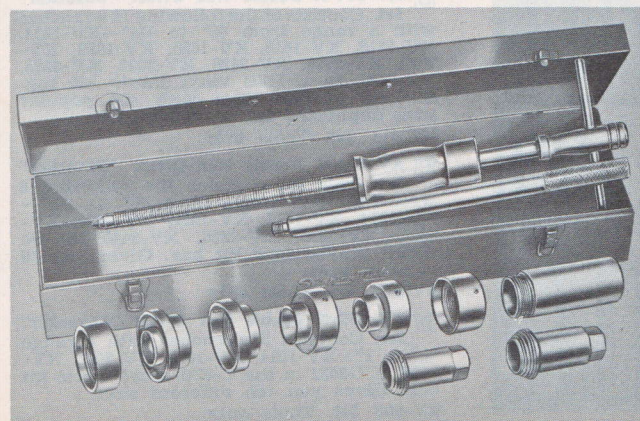
The scale on this gauge is calibrated in increments of two pounds, numerals indicating ten pounds divisions are also shown. A special red zone is provided between 13 and 15 p.s.i. which is the normal range for throttle pressure of Power Flight transmissions. The uncluttered, easy-to-read dial face is $2\frac{1}{2}$ " in diameter. A hook is included on the rear of both gauges to permit hanging in the most convenient location for reaching. Each gauge is equipped with a five foot hose to permit readings to be taken during road tests.

A metal box, KRA-141 shown left is included in the Set. Box measures $13\frac{1}{4}$ " x $10\frac{1}{8}$ " x $1\frac{3}{4}$ " and is finished in red enamel. Has two sections $5\frac{3}{4}$ " x 10" for storing the gauges and a smaller middle section holds the nine adaptors. Contains instructions inside cover showing the proper adaptor to use for each car.

AT-671-B Oil Pressure Gauge Set in KRA-140 metal box including all parts listed below.

Stock No.	Description	Stock No.	Description
AT-67-1A	Gauge, Hose & Quick Coupler Assem.	AT-67-8	$\frac{1}{8}$ " Pipe Elbow 45°
AT-67-2A	Hose Adaptor	AT-67-9	$\frac{1}{8}$ " Female & $\frac{3}{8}$ " Male Pipe Bush.
AT-67-4A	Tube Adaptor	AT-67-10	$\frac{1}{8}$ " Female x $\frac{1}{4}$ " Male Pipe Bush.
AT-67-6	Adapt. for Stude.	MT-14-10	$\frac{1}{8}$ " Pipe "T" Fitting
AT-67-7	$\frac{1}{8}$ " Pipe Elbow 90°	AT-67-12	Adaptor for 1960 Ford throttle pressure link

OIL SEAL DRIVER AND PULLER SET FOR AUTOMATIC TRANSMISSIONS



A-1413-B Oil Seal Driver and Puller Set consisting of all the tools listed to right complete in KRA-109 metal box. You have here the minimum set to help correct automatic transmission fluid leakage. It is an important addition to any mechanic's equipment since it allows the job to be done well and in a hurry.
A-1413 Set. Above set without metal box.

Stock No.	Description
66-1	Slide Shaft
10-F	Handle for above
66-2	Slide Hammer
A-14-2	5" Hollow Handle
A-14-3	Driver Head $3\frac{1}{8}$ " Dia. x $1\frac{1}{4}$ "
A-14-4	Driver Head $2\frac{1}{8}$ " Dia. x 1"
A-14-9	Driver Head $2\frac{1}{16}$ " Dia. x $1\frac{3}{4}$ "
A-14-10	Driver Head 3" Dia. x $1\frac{1}{2}$ "
A-14-12	Driver Head $2\frac{1}{16}$ " Dia. x $1\frac{3}{8}$ "
A-14-13	Driver Head $2\frac{3}{8}$ " Dia. x $1\frac{3}{4}$ "
CJ-66-16B	Puller Head, Taper Dia. $1\frac{1}{2}$ " Min., $2\frac{1}{16}$ " Max.
CJ-66-26	Puller Head, Taper Dia. $1\frac{3}{8}$ " Min., $1\frac{7}{8}$ " Max.
S-8673-2	Long Driver
KRA-109	Metal Box

DOUBLE OFFSET "BOXOCKETS"

ADJUSTABLE FOR EVERY
BOXOCKET JOB



Powerful Leverage . . . Strength . . . Balanced Design . . .
Safety . . . Speed . . . Convenience

1. Deeply offset heads are placed at a slight angle to the handle—this gives you clearance to reach countersunk nuts, cylinder head bolts, etc.—also gives knuckle saving clearance over obstructions.
2. The "box" or "ring-type" opening gives you the strongest, safest wrench you can use. The opening cannot spread, and the twisting leverage is applied equally to all corners of the nut.
3. Double hex openings are machined to strict tolerances to fit nuts and bolts snugly without slipping—take a new grip with only a 30° handle swing.
4. Thin side walls permit wrench heads to work in very tight places.
5. Chamfered openings help guide the wrench onto the nut or bolt head.
6. There are two different wrench openings on each handle.
7. Handles are flat with rounded edges to give a firm, comfortable grip.
8. Long handles provide ample direct-line leverage for breaking tough nuts loose or pulling them tight.
9. Complete size range from $\frac{3}{8}$ " to $1\frac{5}{8}$ ".
10. SNAP-ON "Boxockets" are hammer forged from high grade steel, heat treated to exacting standards of toughness and hardness for long, dependable service under constant use.
11. They are beauties, too, with a full polished chrome finish set off by the bright-finish recesses in the handles.
12. A complete set of these wrenches will give you greater working convenience and real wrench adaptability.

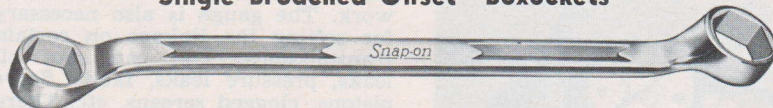
▲ Double Hex offset "Boxockets"

Wrench Size in Inches	Stock No.	Dia. of Heads in Inches	Overall Length
$\frac{3}{8}$ & $\frac{7}{16}$	XV-1214	$\frac{9}{16}$ & $\frac{41}{64}$	$7\frac{19}{32}$ "
$\frac{7}{16}$ & $\frac{1}{2}$	XV-1416	$\frac{41}{64}$ & $\frac{47}{64}$	$8\frac{3}{16}$ "
$\frac{1}{2}$ & $\frac{9}{16}$	XV-1618	$\frac{47}{64}$ & $\frac{13}{16}$	$8\frac{25}{32}$ "
$\frac{9}{16}$ & $\frac{5}{8}$	XV-1820	$\frac{13}{16}$ & $\frac{29}{32}$	$9\frac{23}{64}$ "
$1\frac{1}{8}$ & $1\frac{1}{16}$	XV-1922	$\frac{5}{8}$ & 1	$9\frac{15}{16}$ "
$\frac{5}{8}$ & $1\frac{1}{16}$	XV-2022	$\frac{29}{32}$ & 1	$9\frac{15}{16}$ "
$\frac{5}{8}$ & $\frac{3}{4}$	XV-2024	$\frac{29}{32}$ & $1\frac{5}{64}$	10"
$1\frac{1}{16}$ & $1\frac{1}{8}$	XV-2226	$\frac{5}{8}$ & $1\frac{11}{64}$	$10\frac{1}{2}$ "
$\frac{3}{4}$ & $\frac{7}{8}$	XV-2428	$1\frac{5}{64}$ & $1\frac{1}{4}$	11"
$2\frac{5}{32}$ & $1\frac{13}{16}$	XV-2526	$1\frac{1}{8}$ & $1\frac{5}{64}$	11"
$1\frac{13}{16}$ & $1\frac{7}{8}$	XV-2628	$1\frac{1}{2}$ & $1\frac{1}{4}$	$11\frac{31}{32}$ "
$\frac{7}{8}$ & $1\frac{15}{16}$	XV-2830	$1\frac{1}{4}$ & $1\frac{11}{32}$	13"
$1\frac{15}{16}$ & 1	XV-3032	$1\frac{11}{32}$ & $1\frac{7}{16}$	14"
$1\frac{15}{16}$ & $1\frac{1}{16}$	XV-3034	$1\frac{11}{32}$ & $1\frac{17}{32}$	14"
1 & $1\frac{1}{8}$	XV-3236	$1\frac{7}{16}$ & $1\frac{139}{64}$	15"
$1\frac{1}{16}$ & $1\frac{1}{8}$	XV-3436	$1\frac{13}{64}$ & $1\frac{139}{64}$	15"
$1\frac{1}{16}$ & $1\frac{1}{4}$	XV-3440	$1\frac{13}{64}$ & $1\frac{125}{32}$	16"
$1\frac{3}{16}$ & $1\frac{5}{16}$	XV-3842	$1\frac{14}{64}$ & $1\frac{7}{8}$	17"
$1\frac{1}{4}$ & $1\frac{3}{8}$	XV-4044	$1\frac{125}{32}$ & $1\frac{131}{32}$	18"
$1\frac{3}{8}$ & $1\frac{1}{2}$	XV-4448	$1\frac{131}{32}$ & $2\frac{9}{64}$	19"
$1\frac{7}{16}$ & $1\frac{5}{8}$	XV-4652	$2\frac{3}{64}$ & $2\frac{1}{16}$	21"

▲ Single Hex "Boxockets"

Wrench Size in Inches	Stock No.	Dia. of Heads in Inches	Overall Length
$\frac{3}{8}$ & $\frac{7}{16}$	XV-1214S	$\frac{9}{16}$ & $\frac{41}{64}$	$7\frac{19}{32}$ "
$\frac{7}{16}$ & $\frac{1}{2}$	XV-1416S	$\frac{41}{64}$ & $\frac{47}{64}$	$8\frac{3}{16}$ "
$\frac{1}{2}$ & $\frac{9}{16}$	XV-1618S	$\frac{47}{64}$ & $\frac{13}{16}$	$8\frac{25}{32}$ "
$\frac{9}{16}$ & $\frac{5}{8}$	XV-1820S	$\frac{13}{16}$ & $\frac{29}{32}$	$9\frac{23}{64}$ "

Single Broached Offset "Boxockets"



Because these single hex "Boxockets" take a larger grip on all six sides of the nut than do double hex "Boxockets" they are extremely useful for turning nuts and bolts which are undersized, or are rusted on, or have badly chewed up corners. They are also good for turning Parker-Kalon or other self tapping screws.

XV-604S Single Hex Set. Consists of the four offset "Boxockets" listed at left: XV-1214S to XV-1820S. Get the entire set so that you are ready for those tough jobs.

A XV-619-K Double Hex Offset "Boxocket" Set. This set contains 19 wrenches with a range of $\frac{3}{8}$ " to $1\frac{5}{8}$ ", XV-1214 to XV-4652 (except XV-2628 and XV-3034) in the C-190B vinyl-fabric kit bag. Provides 22 different wrench sizes with duplication of those needed most frequently.

XV-619 Set. Above set without kit bag.

B XV-611-K Double Hex Offset "Boxocket" Set. Consists of the following 11 wrenches with a range from $\frac{3}{8}$ " to $1\frac{1}{4}$ "—XV-1214, XV-1416, XV-1618, XV-1820, XV-1922, XV-2024, XV-2526, XV-2428, XV-3032, XV-3236, XV-3440, in C-113B vinyl fabric kit bag. Sixteen wrench sizes with six popular sizes duplicated for convenient use.

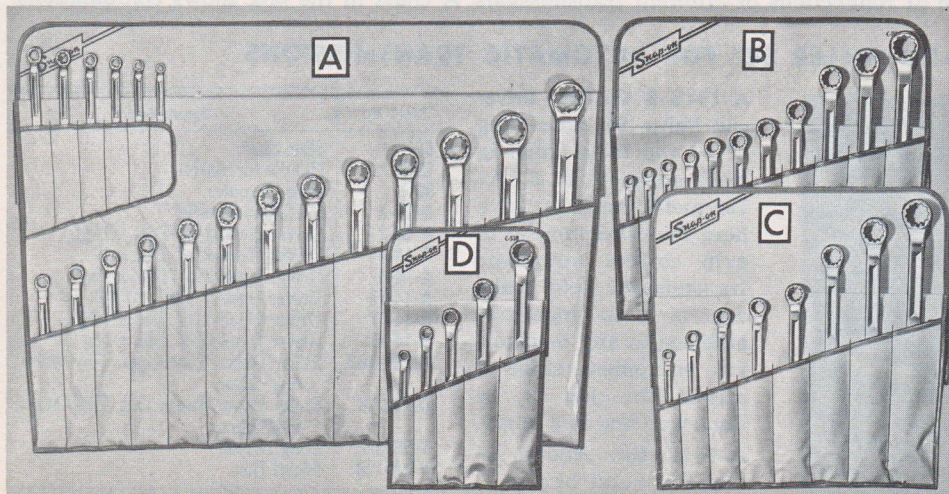
XV-611 Set. Tools only.

C XV-608-K Double Hex Offset "Boxocket" Set. This set contains the following 8 wrenches with range from $\frac{3}{8}$ " to $1\frac{1}{4}$ "—XV-1214, XV-1618, XV-1922, XV-2024, XV-2526, XV-2830, XV-3236, XV-3440 in the C-83B vinyl-fabric kit bag. Gives you 16 popular sizes.

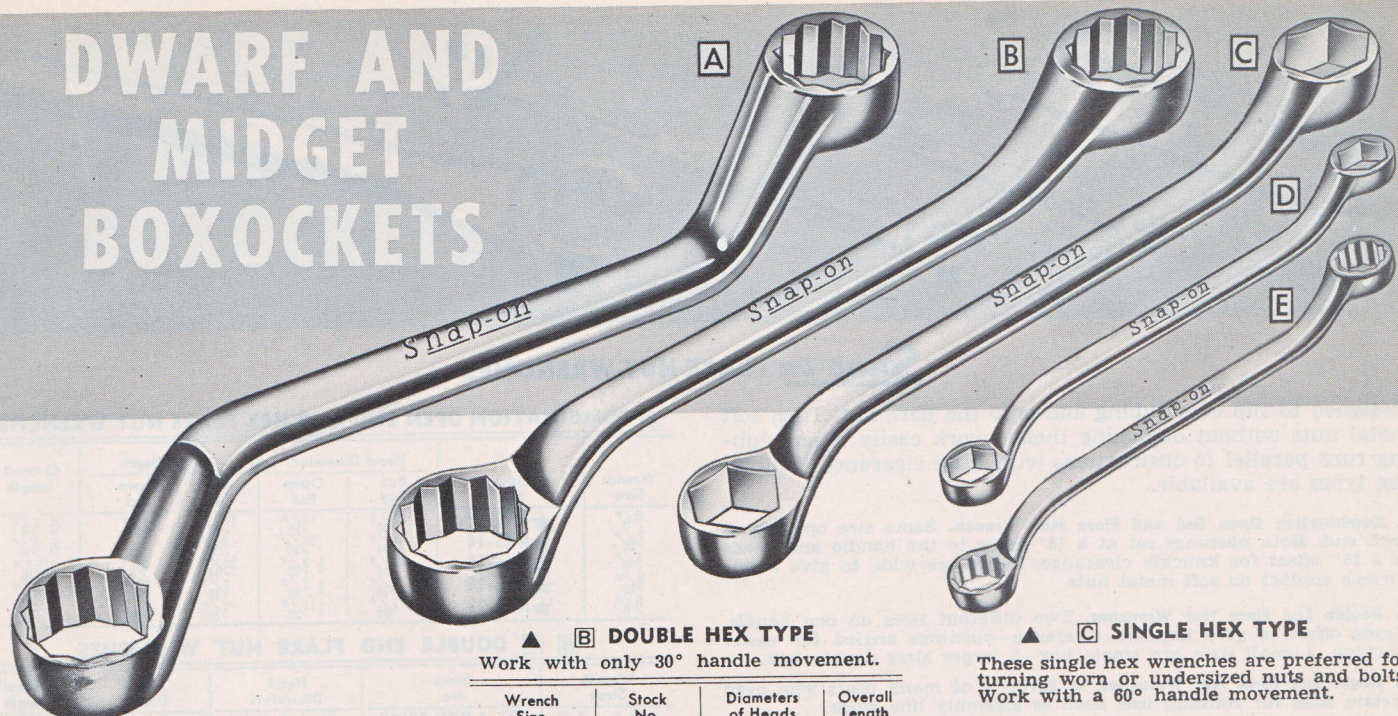
XV-608 Set. Tools only.

D XV-605-K Double Hex Offset "Boxocket" Set. Contains 5 wrenches with a range $\frac{3}{8}$ " to $1\frac{1}{4}$ "—XV-1214, XV-1618, XV-2022, XV-2428, XV-3032 in the C-53B vinyl-fabric kit bag. Gives you ten different sizes.

XV-605 Set. Tools only.



DWARF AND MIDGET BOXOCKETS



DWARF OFFSET "BOXOCKETS"

- Strong, Short Handles
- Ample Leverage
- Chamfered Openings
- Accurate Broaching

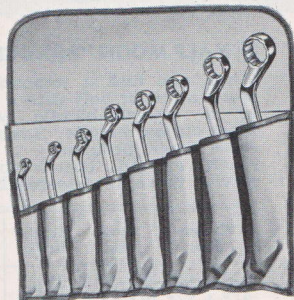
Handles are short for easy work in close places, yet give ample leverage . . . heads are offset to clear obstructions . . . each tool has two wrench sizes. Accurate broaching assures perfectly centered wrench openings, with smooth sides of equalized thickness and strength. These wrenches are forged from high quality alloy steel, heat treated to give toughness and hardness. Full polished chrome finish.

A DEEP OFFSET—DOUBLE HEX

For those deep recessed nuts and bolts these Double Hex Offsets are the answer. They reach deep in to clear obstructions. The deep offsets also give greater knuckle clearance.

Wrench Size	Stock No.	Diameters of Heads	Overall Length
1/4" & 9/32"	XSO-89	25/64" & 7/16"	3 7/8"
★ 1/4" & 5/16"	XSO-810S	29/64" & 17/32"	4 31/64"
1/4" & 5/16"	XSO-810	3/8" & 29/64"	4 5/32"
5/16" & 3/8"	XSO-1012	29/64" & 17/32"	4 31/64"
5/16" & 3/8"	XSO-1214	17/32" & 5/8"	4 53/64"
7/16" & 1/2"	XSO-1416	5/8" & 45/64"	5 5/32"
1/2" & 9/16"	XSO-1618	45/64" & 51/64"	5 1/2"
9/16" & 5/8"	XSO-1820	51/64" & 7/8"	5 27/32"
5/8" & 3/4"	XSO-2024	7/8" & 1 1/64"	6 29/64"
11/16" & 13/16"	XSO-2226	31/32" & 1 1/8"	7 5/64"

*This wrench has single hex openings.



Deep Offset, Double Hex Sets

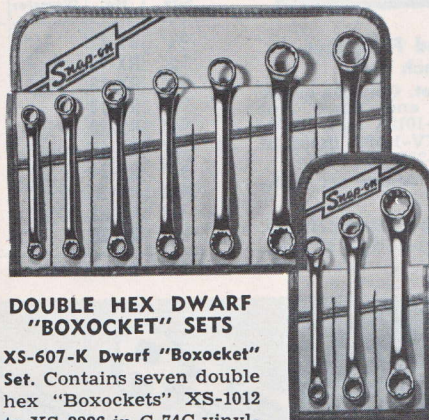
XSO-608-K Dwarf Deep Offset Set. Contains eight hex "Boxockets" XSO-810 to XSO-2226, in C-86B vinyl-fabric kit bag.

XSO-608 Set. Above set without kit bag.

B DOUBLE HEX TYPE

Work with only 30° handle movement.

Wrench Size	Stock No.	Diameters of Heads	Overall Length
3/16" & 7/32"	XS-67	19/64" & 11/32"	3 7/8"
1/4" & 5/16"	XS-810	3/8" & 7/16"	4 1/4"
5/16" & 3/8"	XS-1012	7/16" & 17/32"	4 1/2"
3/8" & 7/16"	XS-1214	17/32" & 5/8"	4 13/16"
7/16" & 1/2"	XS-1416	5/8" & 11/16"	5 1/4"
1/2" & 9/16"	XS-1618	11/16" & 13/16"	5 1/2"
9/16" & 5/8"	XS-1820	13/16" & 29/32"	5 13/16"
5/8" & 3/4"	XS-2024	29/32" & 1 5/64"	6 3/16"
11/16" & 13/16"	XS-2226	31/32" & 1 3/32"	6 1/2"



DOUBLE HEX DWARF "BOXOCKET" SETS

XS-607-K Dwarf "Boxocket" Set. Contains seven double hex "Boxockets" XS-1012 to XS-2226 in C-74C vinyl-fabric kit bag.

XS-607 Set. Above set without kit bag.

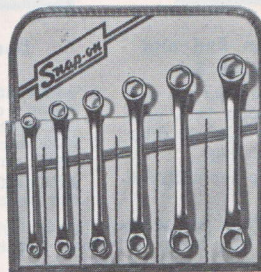
XS-603-K Dwarf "Boxocket" Set. Three "Boxockets" with sizes 3/8" to 3/4" as follows: XS-1214, XS-1618, and XS-2024 in C-33C vinyl-fabric kit bag.

XS-603 Set. Above set without kit bag.

C SINGLE HEX TYPE

These single hex wrenches are preferred for turning worn or undersized nuts and bolts. Work with a 60° handle movement.

Wrench Size	Stock No.	Diameters of Heads	Overall Length
1/4" & 5/16"	XS-810S	3/8" & 7/16"	4 1/4"
5/16" & 3/8"	XS-1012S	7/16" & 17/32"	4 1/2"
3/8" & 7/16"	XS-1214S	17/32" & 5/8"	4 13/16"
7/16" & 1/2"	XS-1416S	5/8" & 11/16"	5 1/4"
1/2" & 9/16"	XS-1618S	11/16" & 13/16"	5 1/2"
9/16" & 5/8"	XS-1820S	13/16" & 29/32"	5 13/16"



SINGLE HEX DWARF "BOXOCKET" SETS

XS-606S-K Dwarf "Boxocket" Set. Contains six single hex "Boxockets" listed above, in C-60C kit bag.

XS-606S Set. Above set without kit bag.

XS-603SA-K Dwarf "Boxocket" Set. Contains three single hex "Boxockets"; XS-1012S, XS-1416S and XS-1820S, in C-33C vinyl-fabric kit bag.

XS-603SA Set. Above set without kit bag.

MIDGET OFFSET "BOXOCKETS"

Time savers on ignition and carburetor work, aircraft and missiles, radio, television, etc., where tiny nuts must be turned. Ends are offset to clear small obstructions and openings are broached precisely. Forged from fine alloy steel, heat treated to assure durability. Polished chrome finish.

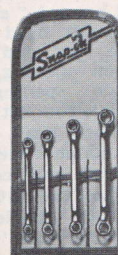
XI-604A-K Single Hex Set. Four "Boxockets" XI-1012 to XI-2022, in C-41C kit bag.

XI-604A Set. Above set, tools only.

XID-604-K Double Hex Set. Four "Boxockets" XID-1213, to XID-2022, in C-41C kit bag.

XID-604 Set. Above set, tools only.

XID-605 Set. XI-78, XI-1012, XID-1415, XID-1618 and XID-2022.



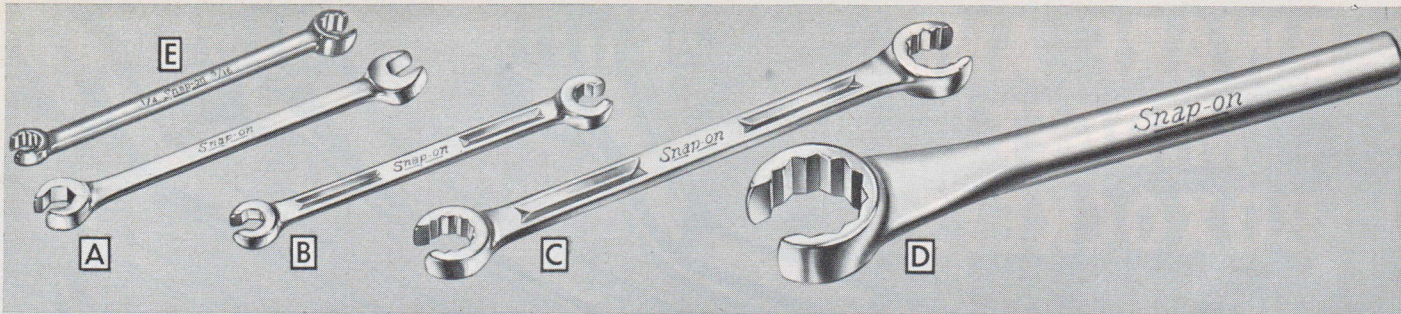
Wrench Size	Stock No.	Diameters of Heads	Overall Length
-------------	-----------	--------------------	----------------

D SINGLE HEX TYPE

7/64" & 1/8"	XI-78	7/32" & 15/64"	2 15/32"
5/32" & 3/16"	XI-1012	17/64" & 19/64"	2 21/32"
7/32" & 15/64"	XI-1415	11/32" & 23/64"	3 3/32"
1/4" & 9/32"	XI-1618	3/8" & 27/64"	3 3/8"
5/16" & 11/32"	XI-2022	15/32" & 31/64"	3 3/4"

E DOUBLE HEX TYPE

3/16" & 13/64"	XID-1213	19/64" & 21/64"	2 13/16"
7/32" & 15/64"	XID-1415	11/32" & 23/64"	3 3/32"
1/4" & 9/32"	XID-1618	3/8" & 27/64"	3 3/8"
5/16" & 11/32"	XID-2022	15/32" & 31/64"	3 3/4"



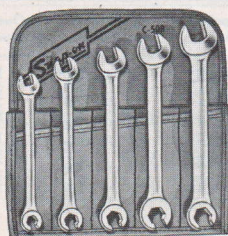
Snap-on FLARE NUT WRENCHES

Designed to slip over tubing and onto the flare nut. Turn soft metal nuts without damaging them—work easily where tubing runs parallel to obstructions with little clearance. Following types are available.

1. Combination Open End and Flare Nut Wrench. Same size opening at each end. Both openings set at a 15° angle to the handle and heads at a 15° offset for knuckle clearance. Heads are wide to give ample surface contact on soft metal nuts.

2. Double End Flare Nut Wrenches. Two different sizes on one handle. Heads offset to give knuckle clearance—openings angled for easier working. 4 small sizes are single hex—3 larger sizes double hex.

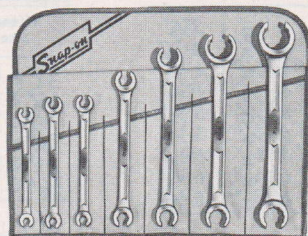
3. Single End Flare Nut Wrenches. A favorite of many users who need certain sizes for constant use, such as assembly line work.



Combination Open End and Flare Nut Wrench Set

★RXS-605-K Set. Consists of the five combination Open End and Flare Nut Wrenches RXS-12 thru RXS-20 in C-50B kit bag.

★RXS-605 Set. Above set without kit bag.



Double End Flare Nut Wrench Set

★RXV-607A-K Set. Consists of the seven double end Flare Nut wrenches RXV-1012S thru RXV-2836 except RXV-1215S listed at right, in the C-75B kit bag.

★RXV-607A Set. Above set without kit bag.

E TRX-810 Midget Flare Nut Wrench. 1/4" and 5/16" double hex openings. Head diameters 13/32" and 1/2". Head depth 7/32" and 9/32". 4" long.

A COMBINATION OPEN END AND HEX FLARE NUT WRENCHES

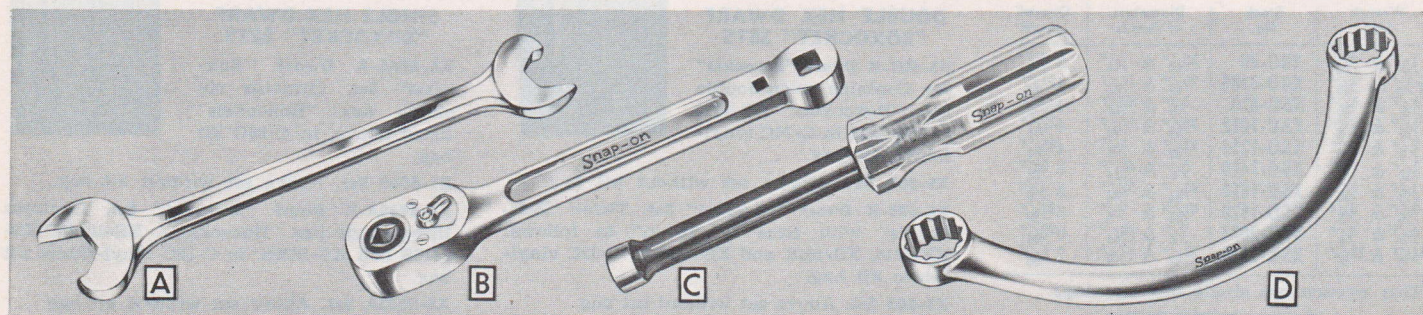
Wrench Size	Stock No.	Head Diameter		Head Depth		Overall Length
		Box End	Open End	Box End	Open End	
3/8"	★RXS-12	51/64"	13/16"	11/32"	11/32"	5 7/8"
7/16"	★RXS-14	57/64"	15/16"	9/8"	9/8"	6 3/8"
1/2"	★RXS-16	63/64"	1 3/32"	25/64"	3/8"	6 15/16"
9/16"	★RXS-18	1 1/16"	1 7/32"	7/16"	7/16"	7 3/8"
5/8"	★RXS-20	1 7/64"	1 11/32"	7/16"	7/16"	7 7/8"

B C DOUBLE END FLARE NUT WRENCHES

Wrench Sizes	Stock No.	Head Diameters		Head Depths		Overall Length
5/16" & 3/8"	B ★RXV-1012S	25/32" & 45/64"		9/32" & 11/32"		5 11/16"
3/8" & 7/16"	B ★RXV-1214S	51/64" & 7/8"		11/32" & 3/8"		6 1/4"
3/8" & 15/16"	B ★RXV-1215S	51/64" & 7/8"		11/32" & 3/8"		6 1/4"
1/2" & 9/16"	B ★RXV-1618S	31/32" & 1 1/16"		3/8" & 7/16"		7 1/2"
5/8" & 1 1/16"	C ★RXV-2022	1 7/64" & 1 15/64"		7/16" & 1/2"		8 1/2"
5/8" & 3/4"	C ★RXV-2024	1 1/16" & 1 13/64"		7/16" & 1/2"		8 9/16"
3/4" & 1"	C ★RXV-2432	1 15/64" & 1 19/32"		1/2" & 5/8"		9 3/16"
7/8" & 1 1/8"	C ★RXV-2836	1 13/32" & 1 3/4"		9/16" & 11/16"		9 7/8"

A D SINGLE END FLARE NUT WRENCHES

Wrench Size	Stock No.	Head Diameter	Head Depth	Overall Length	Wrench Size	Stock No.	Head Diameter	Head Depth	Overall Length
3/8"	RX-12	3/4"	9/32"	6 1/8"	1"	RX-32	1 19/32"	21/32"	7 25/32"
7/16"	RX-14	53/64"	9/16"	6 13/32"	1 1/16"	RX-34	1 143/64"	23/32"	7 27/32"
1/2"	RX-16	15/16"	11/32"	6 23/32"	1 1/8"	RX-36	1 149/64"	3/4"	7 7/8"
9/16"	RX-18	1"	13/32"	6 1/2"	1 1/4"	RX-38	1 127/32"	25/32"	7 15/16"
5/8"	RX-20	1 5/64"	7/16"	6 3/4"	1 1/2"	RX-40	1 115/16"	27/32"	7 31/32"
11/16"	RX-22	1 11/64"	15/32"	7 1/16"	1 5/8"	RX-42	2"	7/8"	13"
3/4"	RX-24	1 1/4"	17/32"	7 3/8"	1 3/4"	RX-44	2 3/32"	7/8"	13 1/16"
13/16"	RX-26	1 11/32"	17/32"	7 5/8"	1 7/8"	RX-48	2 17/64"	31/32"	13 1/8"
7/8"	RX-28	1 27/64"	19/32"	7 3/4"	1 5/8"	RX-52	2 27/64"	1"	13 3/32"
15/16"	RX-30	1 1/2"	19/32"	7 3/4"					



A RATCHETING OPEN ENDS

Ratcheting speed with open end convenience. Run the nut all the way down without removing wrench from the nut. Practical, time saving tools—chrome plated.

Wrench Size	Stock No.	Head Thickness	Overall Length
3/8" & 7/16"	RS-1214	5/32"	5"
7/16" & 1/2"	RS-1416	3/16"	5 1/2"
1/2" & 9/16"	RS-1618	7/32"	6"
9/16" & 5/8"	RS-1820	1/4"	6 1/2"

RS-804A Ratcheting Open End Wrench Set. Consists of one each of above four tools.

B REFRIGERATION RATCHET

R-70B Special Refrigeration Ratchet. Four-in-one wrench for valve stem, coupling, and general refrigeration work. Reverse ratchet head has a 1/4" square opening—the small head contains a 1/2" single hex and a 5/16" square wrench opening, a 3/16" square wrench opening is broached through the flat handle near to the small head. The tool is 6 1/2" long. Ratchet mechanism is fully enclosed and convenient lever reverses the action . . . needs only 20° handle movement to get a new "bite." Head has spring loaded ball sealed oil hole.

A C NUT DRIVERS

BLUE-POINT Nut Drivers are excellent for all electrical work. Their single hex openings fit like a socket wrench for a firm grip and their thin walls eliminate clearance problems. Have clear amber, shock proof plastic handles. Metal shank is covered with fire-resistant, shock proof plastic, each has different color. Openings are single hex.

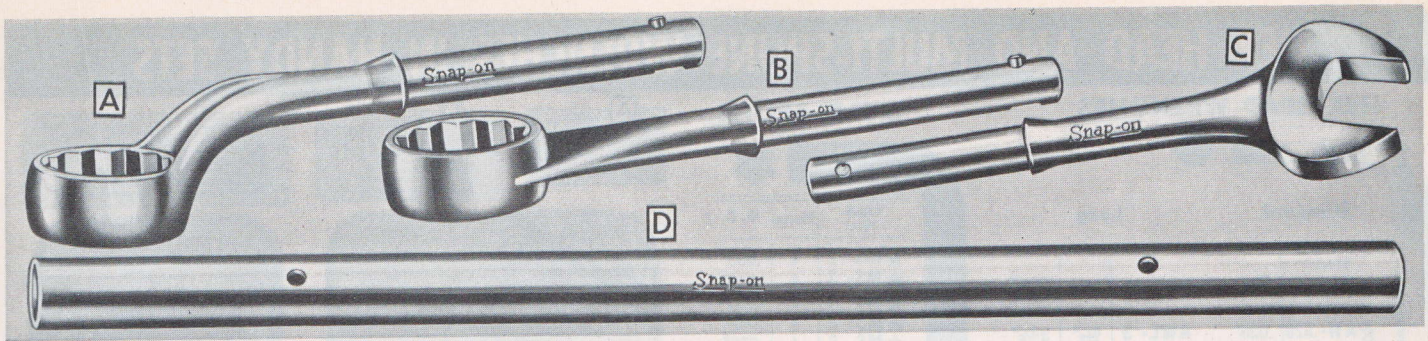
★ND-4 3/4" ★ND-11A 1 1/32"
 ★ND-5 3/8" ★ND-12A 3/8"
 ★ND-6A 3/16" ★ND-14A 7/16"
 ★ND-7A 7/32" ★ND-16A 1/2"
 ★ND-8A 1/4" ★ND-18A 9/16"
 ★ND-9A 9/32" ★ND-20A 5/8"
 ★ND-10A 1/2"
 ★ND-130 Nut Driver Set. Consists of all 13 Drivers listed above.

D HALF MOON "BOXOCKETS"

When you find it impossible to reach a nut or bolt with a socket or a straight-handle wrench these curved handle "Boxockets" solve your problem . . . they reach around obstructions to service those hard-to-reach nuts.

Wrench Size	Stock No.	Handle Radius	Overall Length
7/16" & 1/2"	CX-1416	2 15/64"	5"
9/16" & 5/8"	CX-1820	2 9/16"	6 1/2"
5/8" & 3/4"	CX-2024	3 1/16"	7 3/4"
11/16" & 13/16"	CX-2226	3 1/2"	8 1/2"

CX-604 Set. Contains all four Half Moon "Boxockets" above.



HEAVY DUTY "BOXOCKETS" AND OPEN END WRENCHES WITH TUBULAR HANDLES

Interchangeable straight "Boxockets," offset "Boxockets" and Open Ends give you power and versatility to reach nuts with different clearance problems. Wrenches can be used to run nuts down quickly, and the handle slipped on for final tightening or to reach otherwise inaccessible nuts. Wrench shaft stop helps to align locking button with handle hole. Wrench and handle lock solidly—can't be separated accidentally—an important safety factor. "Boxocket" heads are strong, compact and require little clearance... double hex opening permits nut turning when handle movement is limited.

Open End heads are used where obstructions prevent entrance of a "Boxocket." The angled opening permits flopping the wrench for a new grip in close places. Handles are made of high grade seamless steel tubing for safe powerful leverage.

Heavy Duty "Boxocket" Wrench Set

XH-622A Set. 21 Straight "Boxockets," XH-130A through XH-1100A listed at right.

XH-627AH Set. The XH-622A Set plus 5 Tubular Handles, Nos. 15A through 36A.

XH-609A Set. 9 Straight "Boxockets" XH-130A through XH-152A listed at right.

XH-612AH Set. The XH-609A set plus 3 Tubular Handles Nos. 15A, 18A and 24A.

XO-623A Set. 22 Offset "Boxockets," X-340A through X-1000 listed at right.

XO-623AH Set. The XO-623A Set plus 4 Tubular Handles, Nos. 18A, 24A, 30A and 36A.

XO-617A Set. 16 Offset "Boxockets," X-340A through X-720 listed at right.

XO-620AH Set. The XO-617A Set plus 3 Tubular Handles, Nos. 18A, 24A and 30A.

C OPEN END WRENCHES

Wrench Size	Stock No.	Head Depth	Head Diameter	Length With Handle	Fits Handle
7/8"	OE-128A	1 1/2"	1 15/16"	21 7/8"	15A
1 1/16"	OE-130A	1 1/2"	1 15/16"	21 7/8"	15A
1"	OE-132A	9/16"	2 5/16"	25 1/16"	18A
1 1/16"	OE-134A	9/16"	2 5/16"	25 1/16"	18A
1 1/8"	OE-136A	9/16"	2 5/16"	25 1/16"	18A
1 1/4"	OE-140A	5/8"	2 11/16"	26 3/8"	18A
1 3/16"	OE-142A	5/8"	2 11/16"	26 3/8"	18A
1 1/2"	OE-146A	1 1/16"	3 1/8"	31 5/8"	24A
1 3/4"	OE-148A	1 1/16"	3 1/8"	31 5/8"	24A

Heavy Duty Open End Wrench Sets

OE-128A Set. Contains 9 Open End Wrenches, OE-128A through OE-148A listed at left.

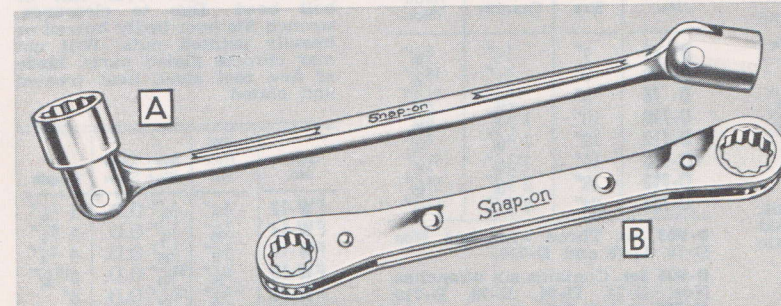
OE-812AH Set. The OE-809A Set plus 3 Tubular Handles, Nos. 15A, 18A and 24A.

D TUBULAR HANDLES

No.	Length	O. D.	I. D.
15A	15"	1 13/16"	5/8"
18A	18"	1 7/8"	1 1/16"
24A	24"	1 1 1/16"	1 7/8"
30A	30"	1 5/16"	1"
36A	36"	1 7/16"	1 1/8"

A B STRAIGHT AND OFFSET "BOXOCKETS"

STRAIGHT TYPE		OFFSET TYPE		Assem. Length from Bolt Center	For Handle No.
Wrench Size	Stock No. B	Stock No. A	Height of Offset		
1 5/16"	XH-130A	—	—	18 3/4"	15A
1"	XH-132A	—	—	18 3/4"	15A
1 1/16"	XH-134A	X-340A	1 5/16"	21 3/4"	18A
1 1/8"	XH-136A	X-360A	1"	21 3/4"	18A
1 1/4"	XH-140A	X-400A	1 1/16"	21 3/4"	18A
1 5/16"	XH-142A	X-420A	1 1/8"	29 1/2"	24A
1 3/8"	—	X-440A	1 3/16"	29 1/2"	24A
1 7/16"	XH-146A	X-460A	1 1/4"	29 1/2"	24A
1 1/2"	XH-148A	X-480A	1 5/16"	29 1/2"	24A
1 9/16"	—	X-500A	1 5/16"	29 1/2"	24A
1 5/8"	XH-152A	X-520A	1 3/8"	29 1/2"	24A
1 11/16"	XH-154A	X-540A	1 7/16"	35 3/4"	30A
1 3/4"	XH-156A	X-560A	1 1/2"	35 3/4"	30A
1 13/16"	XH-158A	X-580A	1 9/16"	35 3/4"	30A
1 7/8"	XH-160A	X-600A	1 5/8"	35 3/4"	30A
2"	XH-164A	X-640A	1 3/4"	35 3/4"	30A
2 1/16"	XH-166A	X-660A	1 3/4"	35 3/4"	30A
2 3/16"	XH-170A	X-700A	1 7/8"	35 3/4"	30A
2 1/4"	XH-172A	X-720A	1 7/8"	42"	30A
2 3/8"	XH-176A	X-760A	2"	42"	36A
2 9/16"	XH-182A	X-820A	2 1/4"	42"	36A
2 5/8"	XH-184A	X-840A	2 1/4"	42"	36A
2 3/4"	XH-188A	X-880A	2 1/2"	42"	36A
2 15/16"	—	X-940A	2 5/8"	42"	36A
3 1/8"	XH-1100A	X-1000A	2 3/4"	42"	36A



A FLEX-HEAD WRENCHES

Extremely handy wrenches for universal flange bolts, pan screws that are under cross members, and a hundred and one similar jobs. With the handle in a vertical position you can spin the nut on and then flex over to a horizontal position for final tightening FH-1214BS is single hex and the other sizes are double hex. Full polished chrome finish.

Wrench Size	Stock No.	Head Diameters	Overall Length
3/8" & 7/16"	FH-1214BS	9/16" & 5/8"	6 7/32"
7/16" & 1/2"	FH-1416B	5/8" & 23/32"	6 7/8"
1/2" & 9/16"	FH-1618B	45/64" & 25/32"	7 19/32"
9/16" & 5/8"	FH-1820B	25/32" & 7/8"	8 9/16"
5/8" & 3/4"	FH-2024B	7/8" & 1"	9 11/16"
1 1/16" & 13/16"	FH-2226B	1" & 1 1/8"	10 9/16"
3/4" & 7/8"	FH-2428B	1 3/64" & 1 1/16"	10 5/8"

B RATCHETING "BOXOCKETS"

When working space is limited you can speed up the job with these wrenches. Sturdy yet thin, they reach into extremely close spaces. Nos. R-810 and R-1214 have single hex openings and the rest are double hex. Polished chrome finish.

Wrench Size	Stock No.	Head Thickness	Overall Length
1/4" & 5/16"	R-810	11/32"	4 9/32"
3/8" & 7/16"	R-1214	11/32"	5 1/2"
1/2" & 9/16"	R-1618	3/8"	6 31/32"
5/8" & 11/16"	R-2022	13/32"	7 15/16"
5/8" & 3/4"	R-2024	13/32"	7 15/16"
3/4" & 7/8"	R-2428	7/16"	8 5/8"
13/16" & 15/16"	R-2630	7/16"	8 11/16"

HANDY WRENCH SETS

C RATCHETING "BOXOCKET" SET
RB-606-K Set. Consists of the six Ratcheting "Boxockets" R-810 through R-2428 listed at left. Complete in C-62B vinyl-fabric kit bag. This set will meet practically all your requirements.

RB-606 Set. Above set but without the C-62B kit bag.

FLEX-HEAD WRENCH SET

D FH-607B-K Set. Consists of the 7 Flex-Head wrenches FH-1214BS through FH-2428B listed at left, in C-75B vinyl-fabric bag.

FH-607B Set. Above set but without the C-75B kit bag.

HEX HEAD AND MULTI-SPLINE WRENCHES IN HANDY SETS

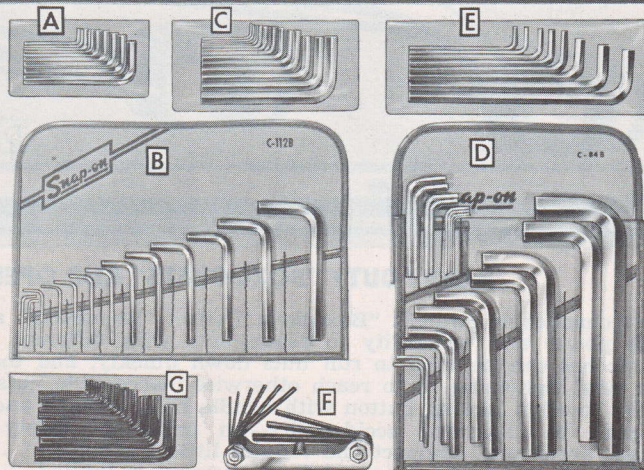
HEX HEAD WRENCHES

Standard		Long		
Stock No.	Size	Stock No.	Size	Length to Bend
★AW-.028	.028"	AWL-3	3/32"	3 3/8"
★AW-.035	.035"	AWL-4	1/8"	3 3/4"
★AW-1 1/2	3/64"	AWL-5	5/32"	4 1/8"
AW-2	1/16"	AWL-6	3/16"	4 1/2"
AW-2 1/2	5/64"	AWL-7	7/32"	4 7/8"
AW-3	3/32"	AWL-8	1/4"	5 1/4"
AW-3 1/2	7/64"	AWL-10	5/16"	6"
AW-4	1/8"	AWL-12	3/8"	6 3/4"
AW-4 1/2	9/64"			
AW-5	5/32"			
AW-6	3/16"			
AW-7	7/32"			
AW-8	1/4"			
AW-10	5/16"			
AW-12	3/8"			
AW-14A	1/2"			
AW-16	1 1/8"			
AW-18	1 1/4"			
AW-20	1 1/2"			
AW-24	1 3/4"			

Metric Hex Head Wrenches are listed on page 41

MULTI-SPLINE

Stock No.	Flutes	O. D.
★MS-2	4	.033"
★MS-3	4	.048"
★MS-4	6	.060"
★MS-5	4	.069"
★MS-6	4	.076"
★MS-7	6	.072"
★MS-8	6	.096"
★MS-10	6	.110"
★MS-16	6	.144"
★MS-20	6	.183"
★MS-24	6	.216"
★MS-28	6	.251"
★MS-32	6	.291"
★MS-40	6	.372"
★MS-48	6	.454"



A AW-1009KA Set. 9 Standard hex head wrenches, AW-2 1/2 thru AW-8 in C-10B kit bag with grip fastener.

B AW-1013K Set. 13 Standard hex head wrenches, AW-1 1/2 through AW-12 in C-112B red vinyl-fabric bag.

C AW-1013KC Set. 13 Standard hex head wrenches, AW-1 1/2 through

AW-12 in C-11B transparent plastic kit bag with grip fastener.

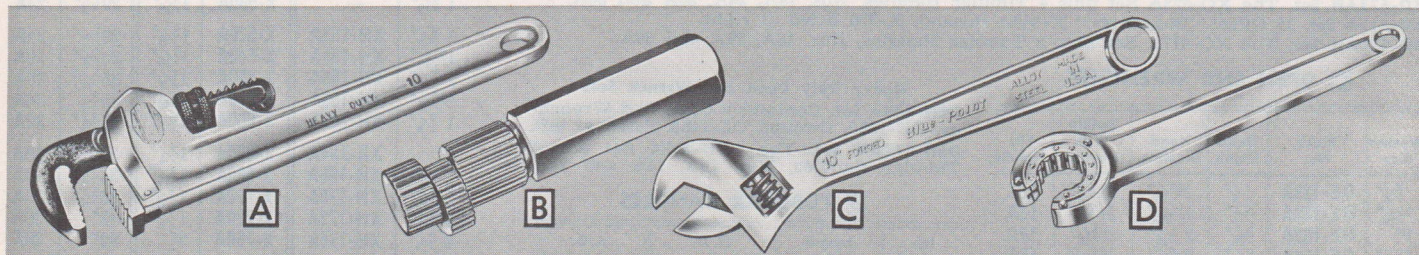
D AW-1018K Set. 18 Standard hex head wrenches, AW-1 1/2 through AW-24 in C-84B red vinyl-fabric kit.

E AW-1018 Set. Above set, tools only.

F AWL-1008KA Set. 8 Long hex head wrenches, AWL-3 through AWL-12 in C-15A kit bag.

G MS-1012KA Set. 12 Multi-Spline wrenches. All sizes listed except MS-2, MS-3 and MS-7, in C-16 red vinyl kit bag with transparent front.

MS-1012 Set. Same as above but without kit bag.



▲ A PIPE WRENCHES

Movable jaw has pipe size markings. Flat and coil spring provides tension to grip pipe without wedging jaws. Hardened machine cut teeth.

No.	Length	Pipe Capacity
PW-6A	6"	3/4"
PW-8A	8"	1"
PW-10A	10"	1 1/2"
PW-12A	12"	1 3/4"
PW-14A	14"	2"
PW-18A	18"	2 1/2"
PW-24A	24"	3"
PW-36A	36"	4 1/2"
PW-48A	48"	6"

PWA-904 Set. Consists of four wrenches, the 6", 8", 10" and 14".
PWA-906 Set. Consists of the 6", 8", 10", 14", 18" and 24" sizes.

▲ B INTERNAL PIPE WR.

Center knurled section rotates in either direction to grip inside wall of pipe. Use any tool to turn hex handle. Excellent for removing or installing pipe, nipples or fittings.

No.	Size	No.	Size
PWN-4	1/8"	PWN-32	1"
PWN-8	1/4"	PWN-40	1 1/4"
PWN-12	3/8"	PWN-48	1 1/2"
PWN-16	1/2"	PWN-64	2"
PWN-24	3/4"		

PWN-904 Set. Consists of 4 sizes, PWN-12, PWN-16, PWN-24, and PWN-32. In buttoned plastic case.

▲ C ADJUSTABLE WRENCHES

Extra strong, extra-thin jaws to get into tight places. Made of new high quality alloy steel for strength and long life.

No.	Size	Capacity	Head Thick.
D-74	4"	1 1/2"	5/16"
D-76	6"	2"	13/32"
D-78	8"	2 1/2"	1 1/8"
D-710	10"	3"	1 1/4"
D-712	12"	3 1/2"	1 1/2"
D-715	15"	4"	1 3/4"
D-718	18"	4 1/2"	1 7/8"
D-724	24"	5"	2"

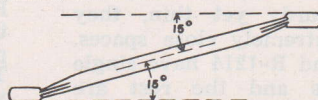
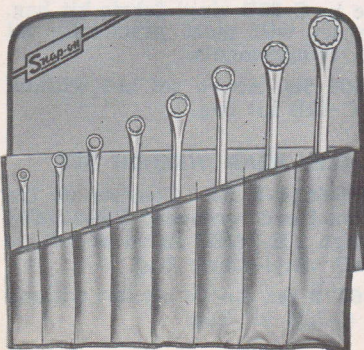
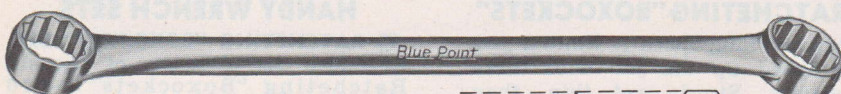
D-903 Set. Three wrenches, Nos. D-76, D-78 and D-710.

D-906 Set. Contains six wrenches, Nos. D-74, D-76, D-78, D-710, D-712 and D-715.

D CAM-LOCK WRENCHES

Grip tighter than end wrenches, work faster than box wrenches. A circle of swinging cams, spring loaded, permit smooth ratcheting action which automatically equalizes torque over nut or bolt head. Due to clearance, wrench fits over badly burred or heavily painted nuts. Will not mar chrome plated parts. Made of fine tool steel, heat treated and plated.

Stock No.	Fits Hex Nut	Slips Over Pipe Sizes	Length
FW-12	3/8"	1/4" O.D.	4 3/4"
FW-14	7/16"	1/2" O.D.	4 3/4"
FW-16	1/2"	5/8" O.D.	4 3/4"
FW-18	9/16"	3/4" O.D.	5 13/32"
FW-20	5/8"	7/8" O.D.	6"
FW-22	11/16"	1" O.D.	6 19/32"
FW-24	3/4"	1 1/8" O.D.	7 1/16"
FW-28	7/8"	1 1/4" O.D.	8 13/32"
FW-32	1"	1 1/2" O.D.	9 19/32"



15° ANGLE "BOXOCKETS"

Heads are set at a 15° angle to provide ample handle clearance from obstructions yet give you the direct pulling leverage so necessary to break tight nuts loose. A chamfer around each side of the wrench opening aids in guiding the wrench onto the nut or bolt. For greater adaptability each "Boxocket" is designed with 2 different wrench sizes on each handle. Finished in satin chrome while the heads are highly polished.

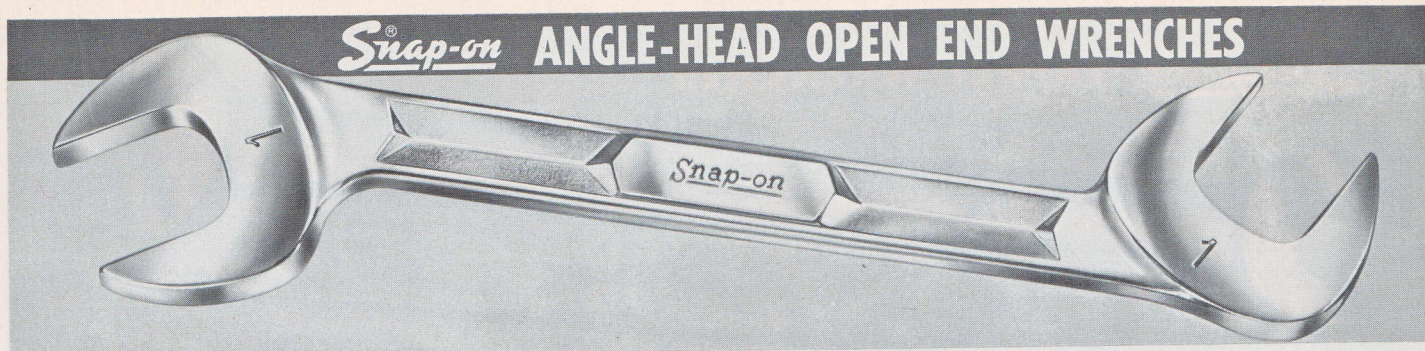
XD-608-K "Boxocket" Set. Consists of all 15° angle "Boxockets" listed at the left except XD-3436. In C-83 kit bag.

XD-608 Set. Above set without kit bag.

XD-609 Set. All 9 "Boxockets" listed at left.

Wrench Sizes	Stock No.	Diameter of Heads	Overall Length
3/8" & 7/16"	XD-1214	37/64" & 43/64"	8 1/2"
1/2" & 9/16"	XD-1618	3/4" & 27/32"	9 1/4"
5/8" & 11/16"	XD-1820	27/32" & 59/64"	9 5/8"
3/4" & 1 1/8"	XD-1922	57/64" & 1 1/4"	10"
7/8" & 1 1/4"	XD-2024	59/64" & 1 3/8"	10 7/8"
1 1/8" & 1 1/2"	XD-2526	1 9/16" & 1 5/8"	11 7/8"
1 1/4" & 1 3/4"	XD-2428	1 3/8" & 1 7/8"	12 3/8"
1 1/2" & 1 7/8"	XD-3032	1 5/8" & 1 3/4"	13 1/2"
1 3/4" & 2"	XD-3436	1 3/4" & 1 7/8"	15 1/2"

▲ Federal Specs: "PWR" Series Pipe Wrenches are covered by Federal Specs GGG-W-651c; "PWN" Series Internal Pipe Wrenches by GGG-W-643A; "D" Series Adjustable Wrenches by GGG-W-631A.



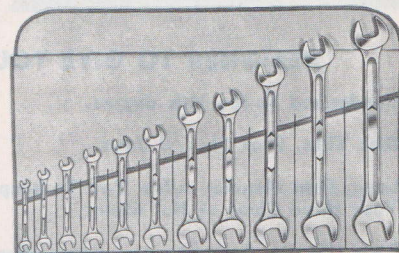
HEADS SET AT 30° AND 60° ALLOW YOU TO TURN NUTS EASIER IN TIGHT CORNERS

The 30° and 60° head arrangement gives you four usable wrench positions and makes it possible for you to turn nuts which are located in narrow swing areas where standard open ends or other type wrenches just won't work. Add these tools to your kit and you eliminate all your turning troubles on those hard-to-reach nuts in the $\frac{3}{8}$ " to $1\frac{1}{16}$ " size range.

Other features include well rounded handle edges that are comfortable in the hand . . . pear-shaped, thin jaws which contribute to close quarter operation . . . draw-broached openings which give you accurate, close fitting wrenches. Polished, chrome plated finish with bright finish recesses in the

handles. Hammer forged from fine alloy steel heat treated under controlled conditions to assure toughness and hardness.

Stock No.	Wrench Size	Head Thickness	Overall Length
VS-5212	$\frac{3}{8}$ "	$\frac{3}{16}$ "	$5\frac{1}{16}$ "
VS-5214	$\frac{7}{16}$ "	$\frac{7}{32}$ "	$5\frac{1}{2}$ "
VS-5216	$\frac{1}{2}$ "	$\frac{1}{32}$ "	$6\frac{1}{32}$ "
VS-5218	$\frac{9}{16}$ "	$\frac{1}{4}$ "	$6\frac{1}{2}$ "
VS-5220	$\frac{5}{8}$ "	$\frac{1}{4}$ "	7
VS-5222	$\frac{11}{16}$ "	$\frac{9}{32}$ "	$7\frac{1}{2}$ "
VS-5224	$\frac{3}{4}$ "	$\frac{3}{16}$ "	8
VS-5226	$\frac{13}{16}$ "	$\frac{11}{32}$ "	$8\frac{1}{2}$ "
VS-5228	$\frac{7}{8}$ "	$\frac{3}{8}$ "	$9\frac{1}{4}$ "
VS-5230	$\frac{15}{16}$ "	$\frac{3}{8}$ "	$9\frac{1}{4}$ "
VS-5232	1"	$\frac{13}{32}$ "	$9\frac{7}{8}$ "
VS-5234	$1\frac{1}{16}$ "	$\frac{13}{32}$ "	$10\frac{3}{8}$ "



VS-809-K Set. Consists of nine wrenches, VS-5212 through VS-5228 listed at left complete in C-92C vinyl-fabric kit bag.

VS-809 Set. Same as above but without C-92C kit bag.

FINEST QUALITY HAMMERS

▲ [A] BALL PEEN HAMMERS

Quality from start to finish. Well balanced, correctly designed and heat treated and drop forged from high grade alloy steel, they will withstand long, hard service. Handles are of second growth, well seasoned hickory, carefully turned so that grain runs full length. Securely anchored to head. Extra handles can be purchased separately—each comes with two metal and one wood wedge.

Hammer Complete		Extra Handle
Stock No.	Weight	Stock No.
BP-2	2 oz.	★BPH-2
BP-4	4 oz.	★BPH-4
BP-8	8 oz.	★BPH-8
BP-12	12 oz.	★BPH-12
BP-16	1 lb.	★BPH-12
BP-20	$1\frac{1}{4}$ lbs.	★BPH-12
BP-24	$1\frac{1}{2}$ lbs.	★BPH-24
BP-32	2 lbs.	★BPH-24
BP-40	$2\frac{1}{2}$ lbs.	★BPH-40
BP-48	3 lbs.	★BPH-40

[D] CELLULOSE TIP HAMMERS

For any kind of work where precision finished or delicate parts would be injured by metal hammers. The tips are tough plastic and will stand a lot of pounding without undue marring of the faces . . . tips are easily replaced when necessary. Three sizes are available. Center part of head is enameled steel.

Hammers Complete		Extra Tips	
Stock No.	Weight	Stock No.	Tip Diam.
★91-PH	$\frac{1}{2}$ lb.	★91-PH-2	$1\frac{1}{4}$ "
★92-PH	1 lb.	★92-PH-2	$1\frac{3}{8}$ "

★91-PH-3A Wood handle for above hammers.

SOFT FACE HAMMERS

For working on metal or wood parts without damage . . . wherever pounding without marring is required. The replaceable tips are designed to resist chipping, flaking, and mushrooming. Handles are unidirectional fibre glass, made by bonding together 1,200,000 strands of glass, reinforced with polyester plastic. They are stronger than wood, yet have the "bounce" and "feel" characteristics of fine hickory.

The handles are impervious to dry rot, termites, beetles, splintering, petroleum products, common industrial chemicals, high and low temperatures, fungus, and warpage. Handle grips are shock absorbing, non-slip, red, plastic material, light weight.

[B] **BH-232 Two Pound Hammer.** Furnished with two replaceable tips, medium and hard. A tough nylon tip available separately is designed to withstand harder use. Tips thread directly into the solid head. Head is $3\frac{1}{8}$ " long, $1\frac{5}{8}$ " tip diam., handle is 13".

★BH-232-2 Medium Repl. Tip. Furnished

★BH-232-3 Hard Repl. Tip. Furnished

★BH-232-4 Tough Nylon Tip. Optional

[C] **BH-212 No-Bounce Hammer.** Furnished with three tips of varied hardness and color. The tips thread into spring mounted, floating steel nuts in the head to eliminate chance of stripping threads. Hammer head is shot loaded to deliver 30% more striking power with no rebound. Head (with tips in place) is $4\frac{3}{4}$ ", tip face is $1\frac{1}{32}$ " diameter, handle 13".

★BHH-212 Medium Tip. Furnished

★BHT-212 Hard Tip. Furnished

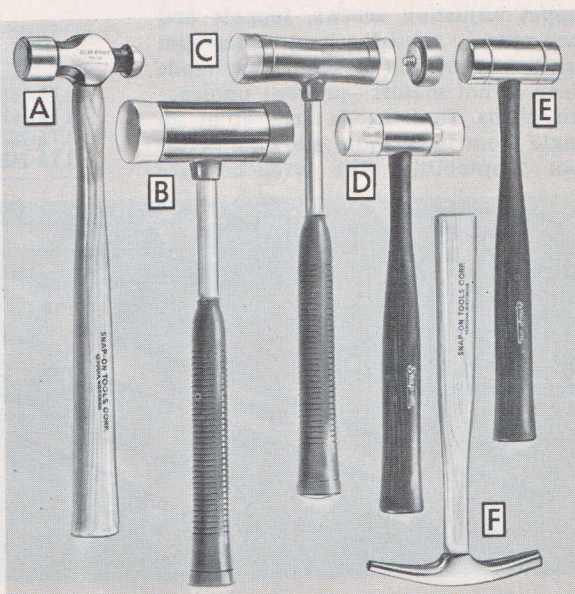
★BHY-212 Tough Nylon Tip. Furnished

FIBRE-GLASS HANDLE KITS

For use on any type of hammer: Each kit consists of a fiberglass handle, a plastic ferrule collar, curved and flat ferrule caps, tape for sealing, two tubes of "Nuplabond," stirring stick, instructions and size chart.

BPH-120 12" Handle Replacement Kit

BPH-160 14" Handle Replacement Kit



[E] BRASS HAMMERS

Two hammers with brass heads especially suited for driving bushings and gears, doing body work or work on standard and automatic transmissions. Handles (No. 91-PH3A) are of high grade, well seasoned hickory, carefully turned and attached to heads with steel and wood wedges. Handles are $11\frac{1}{2}$ " long.

★BH-16 Brass Hammer, 1 lb. Size, head is 3" long, $1\frac{1}{4}$ " diam.

★BH-24 Brass Hammer, $1\frac{1}{2}$ lb. Size, head is 4" long, $1\frac{1}{4}$ " diam.

▲ [F] UPHOLSTERER'S HAMMER

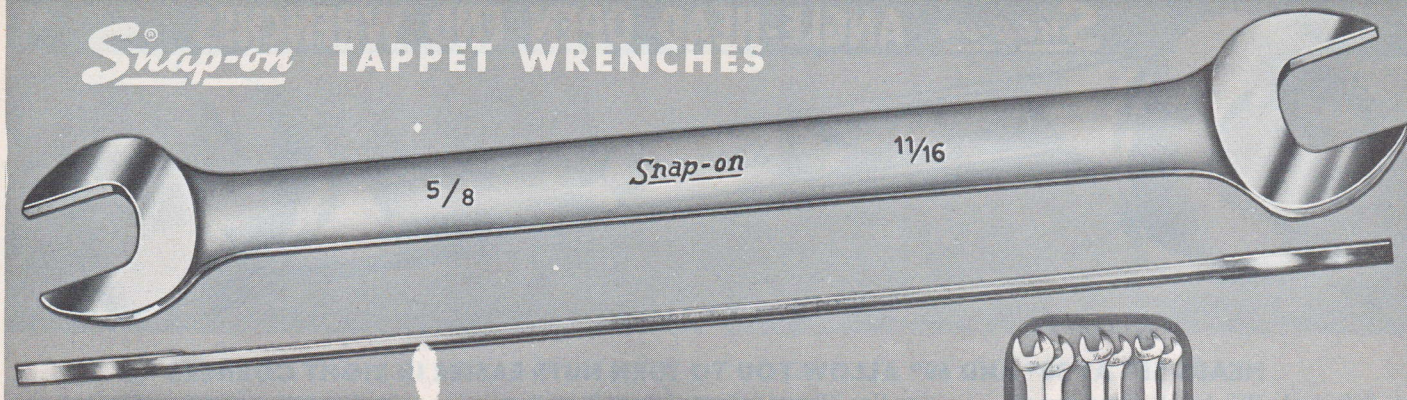
No. 602 Upholsterer's Hammer. Will prove useful in any shop, especially those doing body work. The steel head is $5\frac{1}{2}$ " long with a "split-type" magnetic tip on one end and a larger flat face on the other. Weighs 7 oz. Overall length 10 $\frac{3}{4}$ ".

★602-2 Extra handle only

HANDLE BONDING KIT

★BPH-30K Replacement Bonding Material Kit. Needed when a fibre-glass handle is slightly too small for the hammer head and additional material is needed to supplement the replacement kit, or when the original Nuplabond is improperly mixed. Kit includes one tube each of Nuplabond "A" and "B."

Snap-on TAPPET WRENCHES



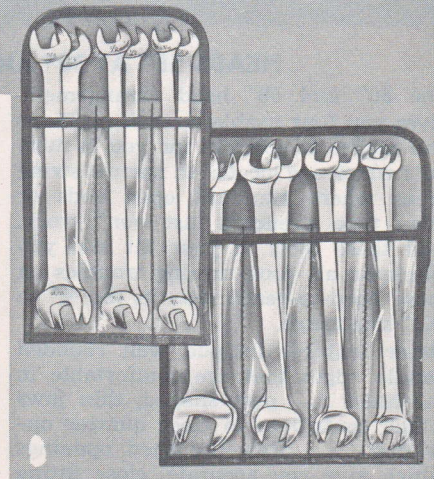
DESIGNED TO GIVE YOU SPEED AND CONVENIENCE

- Slenderized to the Nth degree.
- Disc Thin, Pear Shaped Jaws.
- Long, Slim Handles Allow You To keep Your Hand Clear of Hot Motor.
- Both Heads Set At An Angle For Better Tool Adaptability.

BLUE-POINT Supreme Tappet Wrenches bring speed and convenience to your tappet adjusting operations. Check the outstanding features above. Disc-thin, pear shaped jaws easily get into those close quarters around the tappet adjusting screws, tappets and lock nuts . . . and the long rapier-slim handles allow you to keep your hands clear of hot motors—prevent unpleasant burns. Both heads are set at an angle from the handle allowing better tool adaptability. The wrenches are

extremely light and perfectly balanced . . . superiorities you will appreciate on the job when usually two wrenches are worked like scissors in one hand and a third wrench is used in the other hand. BLUE-POINT gives you the highest qualities of strength and durability. The high carbon, special alloy steel used especially for these tools possesses degrees of strength not obtainable in ordinary tappet wrenches. Heat-treated by most modern methods—polished and chrome plated for finest appearance.

Stock Number	Wrench Sizes	Head Thickness	Overall Length
LTA-1416	7/16" & 1/2"	11/64"	9 1/2"
LTA-1618	1/2" & 9/16"	3/16"	9 1/2"
LTA-2022	5/8" & 11/16"	3/16"	11 1/2"
LTA-2428	3/4" & 7/8"	13/64"	13 1/2"

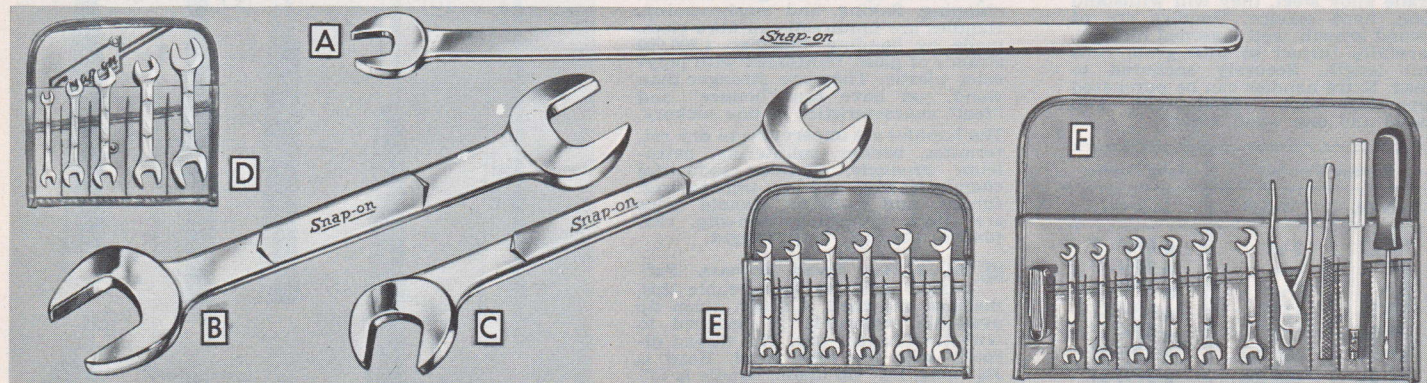


A LTA-806-K Set. Handy tappet adjusting set consists of six wrenches, two each of LTA-1416, LTA-1618, LTA-2022, in C-36C kit bag.

LTA-806 Set. Above set, tools only.

B LTA-808-K Set. Complete set of tappet wrenches for every tappet job. Set consists of 8 wrenches, two of each size, in kit bag C-48C.

LTA-808 Set. Above set, tools only.



A SINGLE END TAPPET WRENCHES

These heavy duty, single end tappet wrenches give you the advantage of extra long handles to protect your hands from hot manifolds. Handles are satin finish—heads are polished chrome plating. Wrench opening sets at 15° to the handle. Hammer forged from tough alloy steel.

Stock No.	Wrench Size	Thickness	Overall Length
XL-140	7/16"	9/32"	14"
XL-166	1/2"	3/16"	14"
XL-169	1/2"	9/32"	14"
XL-186	9/16"	3/16"	14"
XL-189	9/16"	9/32"	14"

B SHORT OPEN ENDS

For nuts from 3/16" to 9/16". Excellent for working in cramped places. Forged from special alloy steel to withstand tough useage. Heads are precision machined. Two sizes on each wrench. Chrome plated finish.

Stock No.	Wrench Size	Head Thickness	Length
J-1214	3/16" & 7/32"	3/32"	23 1/4"
J-1618	1/4" & 9/32"	7/64"	31 3/8"
J-2022	5/16" & 11/32"	1/8"	31 1/2"
J-2428	3/8" & 7/16"	5/64"	37 7/8"
J-3236	1/2" & 9/16"	5/32"	41 1/4"

C J-805A-K Short Open End Set. Contains one each of the above wrenches in C-52C vinyl-fabric kit bag.

J-805A Set, tools only.

D IGNITION OPEN ENDS

Make easy work of those ignition, carburetor, radio, and electrical jobs which take tiny, short handled tools. Made in pairs with two different sizes on each wrench . . . each size duplicated at a different angle.

Stock No.	Wrench 15° End	Sizes 60° End	Head Thickness	Overall Length
DS-88	1/8"	1/8"	3/32"	23 3/4"
DS-1010	5/32"	5/32"	3/32"	27 7/8"
DS-1212	3/16"	3/16"	3/32"	27 7/8"
DS-1516	15/64"	1/4"	7/64"	31 1/4"
DS-1615	1/4"	15/64"	7/64"	31 1/4"
DS-1820	9/32"	5/16"	1/8"	31 1/2"
DS-2018	5/16"	9/32"	1/8"	31 1/2"
DS-2224	11/32"	3/8"	9/64"	33 3/4"
DS-2422	3/8"	11/32"	9/64"	33 3/4"

E DS-806-K Ignition Wrench Set. Consists of six wrenches, DS-1516 thru DS-2422, in C-65C kit bag.

DS-806 Set. Above set tools only.

F TUNE UP KIT

2011-IT-K Tune Up Kit. Here is the necessary set of Ignition Tools for fast, easy tune-up work. Small enough to fit in your pocket, yet complete with the tools you need. Ignition wrenches included are in pairs with two different sizes on each wrench, sizes duplicated for use in limited space. C-110C vinyl-fabric kit bag adds convenience.

Stock No.	DESCRIPTION
5	4 1/2" Midget Pliers
HB-5	Ignition Point File
SSD-234	Small Screw Driver
GA-12	Screw Starter
FB-316	Ign. & Spark Plug Feeler Ga.
DS-806	Set of 6 Ignition Open Ends listed at left.

Snap-on OPEN END WRENCHES

EACH WRENCH HAS TWO SIZES



WRENCH OPENINGS SET AT A 15° ANGLE HELP YOU WORK FASTER AND EASIER IN CLOSE QUARTERS

UNEQUALLED FOR STRENGTH, TOUGHNESS AND FATIGUE RESISTANCE

SPECIFICATIONS of the Individual Wrenches that you can buy separately or in Sets.

Wrench Sizes	▲ Stock No.	Head Diameters	Head Thickness	Overall Length
1/4" & 5/16"	VS-810	17/32" & 21/32"	5/32"	4"
5/16" & 3/8"	VS-1012	21/32" & 25/32"	3/16"	4 9/16"
3/8" & 7/16"	VS-1214	25/32" & 29/32"	13/64"	5 1/8"
7/16" & 1/2"	VS-1416	29/32" & 1 3/32"	7/32"	5 11/16"
1/2" & 9/16"	VS-1618	1 1/16" & 1 1/16"	15/64"	6 1/4"
9/16" & 5/8"	VS-1820	1 3/16" & 1 5/16"	1/4"	6 13/16"
1 1/16" & 11/16"	VS-1922	1 7/32" & 1 7/16"	9/32"	7 1/4"
5/8" & 1 1/16"	VS-2022	1 5/16" & 1 7/16"	1/4"	7 3/8"
5/8" & 3/4"	VS-2024	1 5/16" & 1 9/16"	9/32"	8"
11/16" & 3/4"	VS-2224	1 7/16" & 1 9/16"	9/32"	8 3/8"
11/16" & 13/16"	VS-2226	1 7/16" & 1 11/16"	9/32"	8 5/8"
3/4" & 13/16"	VS-2426	1 9/16" & 1 11/16"	5/16"	9 1/4"
3/4" & 7/8"	VS-2428	1 9/16" & 1 13/16"	11/32"	10 1/4"
25/32" & 13/16"	VS-2526	1 19/32" & 1 11/16"	5/16"	9 11/16"
13/16" & 7/8"	VS-2628	1 11/16" & 1 19/16"	5/16"	10 5/8"
7/8" & 15/16"	VS-2830	1 13/16" & 1 31/32"	11/32"	11 1/2"
15/16" & 1"	VS-3032	1 31/32" & 2 1/32"	3/8"	12 1/2"
1" & 1 1/8"	VS-3236	2 1/16" & 2 1/16"	13/32"	13 1/4"
1 1/8" & 1 1/4"	VS-3436	2 3/16" & 2 1/16"	13/32"	13 3/8"
1 1/8" & 1 1/2"	VS-3440	2 3/16" & 2 5/8"	7/16"	14 5/16"
1 1/4" & 1 3/8"	VS-3842	2 1/2" & 2 3/4"	1 1/2"	15 1/2"
1 3/8" & 1 1/2"	VS-4044	2 5/8" & 2 7/8"	9/16"	16"
1 1/2" & 1 5/8"	VS-4448	3" & 3 3/8"	9/16"	17 5/8"
	VS-4652			19"

CONTENTS of the five Snap-on Open End Wrench Sets—Choose the one that meets your needs.

Wrench Stock Nos.	OPEN END WRENCH SET NUMBERS				
	A	B	C	D	E
	VS-806	VS-808	VS-811	VS-815	VS-820
VS-810	X	X	X	X	X
VS-1012			X	X	X
VS-1214	X	X	X	X	X
VS-1416			X	X	X
VS-1618	X	X	X	X	X
VS-1820			X	X	X
VS-1922				X	X
VS-2022	X	X			
VS-2024			X	X	X
VS-2224					X
VS-2226			X		
VS-2426	X	X			
VS-2428			X	X	X
VS-2526				X	X
VS-2628					
VS-2830	X	X	X	X	X
VS-3032			X	X	X
VS-3236		X		X	X
VS-3436				X	X
VS-3440		X		X	X
VS-3842					X
VS-4044					X
VS-4448					X
VS-4652					X
Kit Bag	C-68C	C-87	C-116B	C-150B	C-200

These Superior Qualities Make SNAP-ON Open End Wrenches Your Very Best Buy

- THIN HEADS • NARROW JAWS • GREAT STRENGTH
- LIGHT WEIGHT • BALANCED DESIGN • COMFORTABLE GRIP
- BROACHED OPENINGS • FINE ALLOY, HIGH CARBON STEEL

Without question, these SNAP-ON Open End Wrenches are designed and made to give you very fine tools of this type. Check these superb features that make them so popular:

Great Strength. Forged from high quality alloy high carbon steel with selectivity controlled heat treating and tempering.

Thin Heads—Narrow Jaws. Pear-shaped design reaches into close quarters, yet they have plenty of "beef" to loosen or tighten the toughest nut or bolt.

Precision Broaching. Smooth wrench openings have close, accurate fit on nut or bolt to prevent slipping—assure positive pull. Openings have rounded bottoms to add strength to the jaw base.

Powerful Handles. Are just the right length for best leverage. They are properly balanced and have the feel you want. Recessed design gives sure finger grip. Rounded edges are easy on your hand.

Light Weight. With all their power and toughness, these SNAP-ON Open Ends are surprisingly light in weight. This means easier work and less fatigue.

Chrome Plated and Polished. To give an easily cleaned and beautiful rust-proof finish for years to come.

Long Life. High carbon alloy steel, the correct design in head and handle, and precision machining and heat treating results in long, trouble-free, dependable service.

The results of these superb features pay big tool dividends for you. You do your work faster since these wrenches are made the way the experienced mechanic wants them made. You do better work because they are precision broached. They fit the nut just right without binding or looseness and help prevent marring the nut or fitting. Proper fit helps avoid slippage and contributes to safe working conditions.

Rid your tool kit of worn out, time taking and unsafe tools and put one of these fine sets of SNAP-ON Open Ends to work for you.

COMPLETE SETS

A VSO-806A-K Set. Complete in C-68C Kit Bag.

VSO-806A Set, tools only.

B VSO-808-K Set. Complete in C-87 Kit Bag.

VSO-808 Set, tools only.

C VSO-811-K Set. Complete in C-116B Kit Bag.

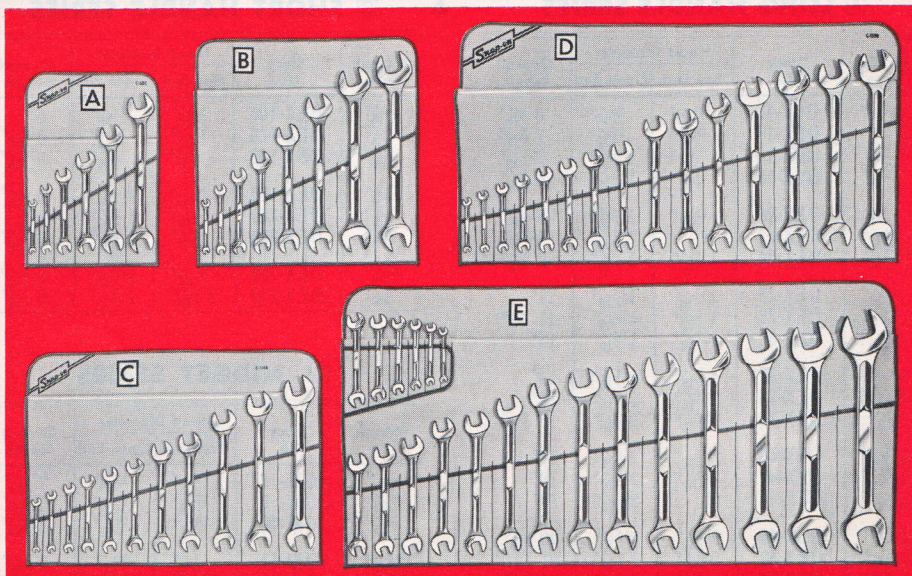
VSO-811 Set, tools only.

D VSO-815-K Set. Complete in C-150B Kit Bag.

VSO-815 Set, tools only.

E VSO-820-K Set. Complete in C-200 Kit Bag.

VSO-820 Set, tools only.



Snap-on

COMBINATION WRENCHES



SNAP-ON Combination Wrenches have two types of openings, both the same size—on the same wrench . . . a hexagon “Boxocket” for breaking tight nuts loose or pulling them tight and an open end for fast turning. The “Boxocket” end is offset at a 15° angle to the handle to clear obstructions. The 15° angle open end lets you turn a nut with only 30° handle movement. Hammer forged, accurately broached, chrome plated, they are the finest wrenches you can buy. Get one of the handy sets listed below.

Large Size Series: “Boxocket” is double hex. Long round handles provide plenty of leverage.

Long Handle Series: “Boxocket” is double hex. Long handles provide needed leverage for tough jobs.

Short Handle Series: “Boxocket” is double hex. Close quarter jobs are easy with these tools.

Midget Series: “Boxocket” is single hex. For tricky, awkward little jobs where sockets won’t work here is real wrench convenience.

▲ D NEW LARGE SIZE COMBINATION WRENCHES

For use on nuts from 1 1/16" to 2" and with up to 29 7/8" handle leverage. These larger sizes are particularly useful for industrial plant use, construction equipment, maintenance, etc., and their heavier construction permits them to successfully withstand the rough treatment they receive in this type of work. The handles are round instead of oval-flat as on the other Combination Wrenches and provide a smooth, comfortable grip. The open end is at a 15° angle which allows a full turn of a nut with only a 30° handle movement. These wrenches are cadmium plated.

Wrench Size	Stock No.	Head Diameter		Overall Length
		Box End	Open End	
1 11/16"	OEX-54	2 1/2"	3 5/8"	24 3/8"
1 3/4"	OEX-56	2 9/16"	3 5/8"	25 3/4"
1 13/16"	OEX-58	2 11/16"	3 5/8"	27 1/4"
1 7/8"	OEX-60	2 3/16"	4"	28 1/2"
2"	OEX-64	2 15/16"	4"	29 5/8"

▲ A LONG HANDLE SERIES

Wrench Size	Stock No.	Head Diameter		Overall Length
		Box End	Open End	
3/8"	OEX-12	19/32"	25/32"	6 9/16"
7/16"	OEX-14	21/32"	29/32"	7 3/32"
1/2"	OEX-16	3/4"	1 1/16"	7 21/32"
9/16"	OEX-18	27/32"	1 3/16"	8 5/16"
5/8"	OEX-20	15/16"	1 5/16"	8 13/16"
11/16"	OEX-22	1"	1 7/16"	9 1/4"
3/4"	OEX-24	1 3/32"	1 9/16"	9 3/4"
13/16"	OEX-26	1 3/16"	1 11/16"	11"
7/8"	OEX-28	1 9/32"	1 13/16"	11 7/8"
15/16"	OEX-30	1 11/32"	1 15/16"	13"
1"	OEX-32	1 7/16"	2 1/16"	14"
1 1/16"	OEX-34	1 9/16"	2 3/16"	15"
1 1/8"	OEX-36	1 21/32"	2 5/16"	15 7/8"
1 1/4"	OEX-40	1 27/32"	2 9/16"	17"
1 5/16"	OEX-42	1 29/32"	2 11/16"	18"
1 3/8"	OEX-44	2"	2 13/16"	19"
1 7/16"	OEX-46	2 1/16"	2 15/16"	20 1/16"
1 1/2"	OEX-48	2 5/32"	3 1/16"	21 1/16"
1 5/8"	OEX-52	2 5/16"	3 3/16"	22 1/8"

▲ B SHORT HANDLE SERIES

Wrench Size	Stock No.	Head Diameter		Overall Length
		Box End	Open End	
5/16"	OEX-100	15/32"	1 1/16"	5"
9/8"	OEX-120	17/32"	1 3/16"	5 7/32"
7/16"	OEX-140	5/8"	1 5/16"	5 7/16"
1 1/2"	OEX-160	1 1/16"	1 1 1/16"	5 3/4"
9/16"	OEX-180	1 3/16"	1 3/16"	6"
5/8"	OEX-200	1 9/32"	1 9/32"	6 5/16"
1 1/16"	OEX-220	31/32"	1 13/32"	6 19/32"
3/4"	OEX-240	1 1/16"	1 1/2"	6 7/8"

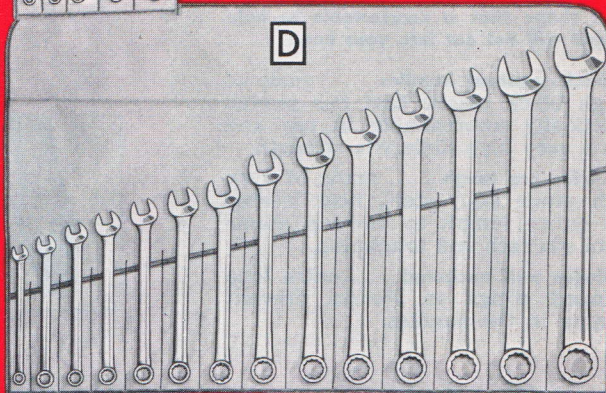
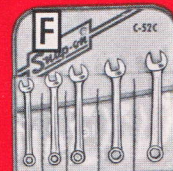
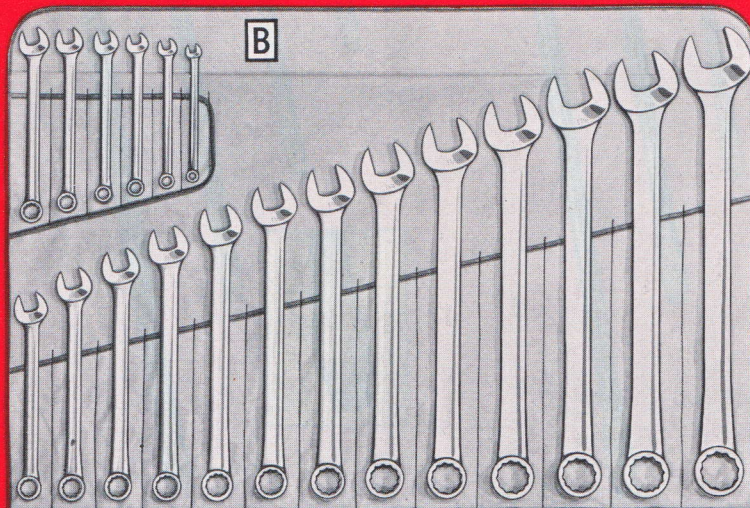
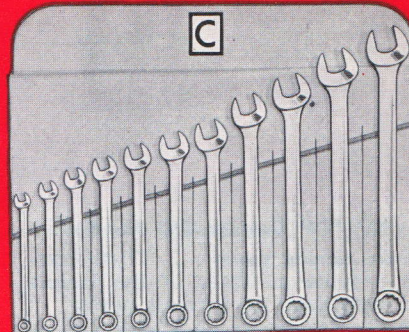
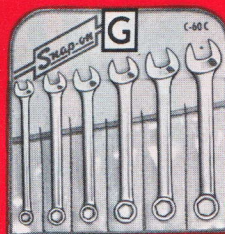
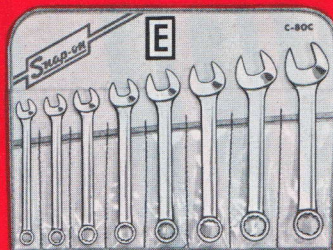
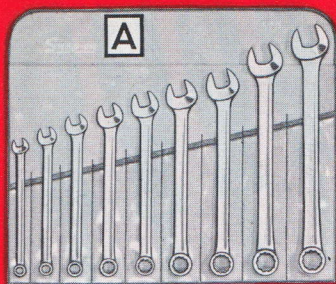
C MIDGET SERIES

Wrench Size	Stock No.	Head Diameter		Overall Length
		Box End	Open End	
1/4"	OXI-8	3/8"	17/32"	3 1/16"
9/32"	OXI-9	27/64"	19/32"	3 9/32"
5/16"	OXI-10	29/64"	21/32"	3 15/32"
11/32"	OXI-11	1/2"	23/32"	3 11/16"
3/8"	OXI-12	17/32"	3/4"	3 7/8"

E OFFSET COMBINATIONS

Both heads are offset at a 15° angle to the handle to provide plenty of clearance over obstructions and for your fingers. “Boxocket” is single hex and is especially useful for use on undersized or rounded nuts and for Parker-Kalon self threading screws. The open end is placed at a 15° angle to the handle as well as offset 15° . . . needs only 30° handle movement to get a new bite.

Wrench Size	Stock No.	Head Diameter		Overall Length
		Box End	Open End	
5/16"	OXA-100	15/32"	1 1/16"	5"
3/8"	OXA-120	17/32"	1 3/16"	5 7/32"
7/16"	OXA-140	5/8"	1 5/16"	5 7/16"
1/2"	OXA-160	1 1/16"	1 1 1/16"	5 3/4"
9/16"	OXA-180	1 3/16"	1 3/16"	6"
5/8"	OXA-200	1 9/32"	1 9/32"	6 5/16"



OWN A COMPLETE SET OF **Snap-on** COMBINATION WRENCHES

So many jobs require more than one wrench at a time that you will find it convenient to own a complete Set as illustrated and listed here. These Sets have been made up of the most popular sizes used, a Set to meet every job and every pocket book. The tough, durable red vinyl plastic cases or kit bags help keep tools clean and protect them. They show too, at a glance if any one is missing and in that way save you from losing tools. Professional mechanics buy their wrenches in Sets . . . and SNAP-ON Wrenches are the best they can buy.

LONG HANDLE SETS

A 9-Wrench Set

OEX-709-K Combination Wrench Set. Contains OEX-12, 14, 16, 18, 20, 22, 24, 26, and 28. A selection of 9 popular sizes $\frac{3}{8}$ " to $\frac{7}{8}$ ". In C-93C kit bag.

OEX-709 Set. Above set of tools without the kit bag.

B 19-Wrench Set

OEX-719-K Combination Wrench Set. Contains one each of the 19 long handle series wrenches listed opposite, OEX-12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36, 40, 42, 44, 46, 48 and 52 in C-190B kit bag.

OEX-719 Set. Above Set without kit bag.

C 11-Wrench Set

OEX-711-K Combination Wrench Set. Contains one each of the following wrenches: OEX-12, 14, 16, 18, 20, 22, 24, 26, 28, 30 and 32 in C-114B kit bag. Sizes $\frac{3}{8}$ " to 1".

OEX-711 Set. Above Set without kit bag.

D 14-Wrench Set

OEX-714-K Combination Wrench Set. Contains one each of the following long handle wrenches: OEX-12, 14, 16, 18, 20, 22, 24, 26, 28, 30, 32, 34, 36 and 40 in C-141B kit bag. Sizes $\frac{3}{8}$ " to $1\frac{1}{4}$ ".

OEX-714 Set. Above Set without kit bag.

SHORT HANDLE SETS

E 8-Wrench Set

OEXS-708-K Combination Wrench Set. Contains one each of OEX-100, 120, 140, 160, 180, 200, 220 and 240 as listed opposite in C-80C transparent pocket kit bag.

OEXS-708 Set. Above Set without kit bag.

MIDGET SET

F 5-Wrench Set

OXI-705-K Midget Combination Wrench Set. Contains one each of OXI-8, 9, 10, 11 and 12 in C-52C transparent pocket kit bag.

OXI-705 Set. Above Set without kit bag.

OFFSET WRENCH SET

G 6-Wrench Set

OXA-706-K Offset Combination Wrench Set. Contains one each of OXA-100, 120, 140, 160, 180 and 200 listed opposite in C-60C transparent pocket kit bag.

OXA-706 Set. Above Set without kit bag.

FOR METRIC AND BRITISH STANDARD WRENCHES AND TOOL SETS
SEE PAGES 39-40-41.



Check

THESE

Snap-on

COMBINATION WRENCH

Features:

Thin Heads get in close places

Narrow Jaws work between obstructions

Double Hex "Boxockets" work with 30° swing

"Boxocket" 15° offset from handle to clear obstructions

Open End at 15° angle from handle

Tough and strong for long wear

Light Weight and Balanced Design makes them "feel" good

Comfortable Grip Handles—no sharp edges

Fine Alloy High Carbon Steel

Expertly Heat Treated and Hardened

Snap-on[®]

SCREW DRIVERS

with NEW Contour-Grip Handles

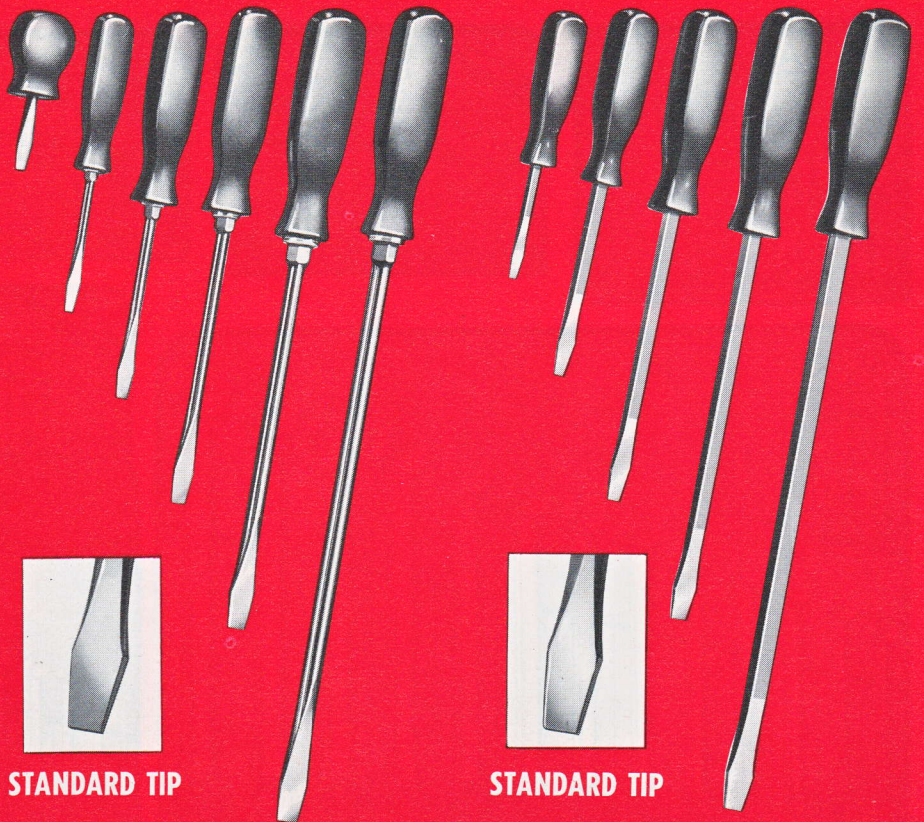
• **More turning power . . .** These handles provide all three of the factors that contribute to turning power.

1. Proper size relationship of handle to blade.
2. A shape that fits the hand and will not slip under pressure.
3. A shape that is comfortable to hold and will not cut into your hand.

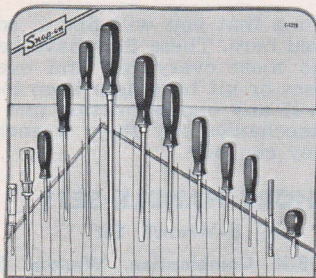
• **Shock-resistant handles . . .** made of tough black plastic that has proved practically unbreakable in use and has a very high dielectric strength.

• **Blades are tough . . .** made of very high grade alloy steel, heat treated the entire length to develop maximum strength and toughness.

• **Blades well anchored . . .** extra long crimped wings on shanks prevent turning in the handles.



STANDARD TIP DRIVER SET



SSDS-130-K Screw Driver Set. 13 tools, SSD-1, SSD-2, SSD-4, SSD-6, SSD-8, SSD-12, SSD-143, SSD-146, SSD-1410, SD-145, SSD-234, SD-204 and GA-12 Screw Starter, in C-132B Kit Bag.

SSDS-130 Set. Above set, tools only.

Snap-on STANDARD TIP SCREW DRIVERS

ROUND SHANK SERIES

This series has round shanks and the 2½" to 12" blades have a forged bolster which prevents forcing the blade into the handle. The bolster on the 8" and 12" sizes is hexagon shaped . . . a wrench can be applied to give extreme leverage. Tips are precision cross ground.

Stock No.	Blade Tip Width	Blade Length	Blade Dia.	Overall Length
SSD-1	1/4"	11 1/2"	1/4"	31 1/4"
SSD-2	3/16"	21 1/2"	7/32"	6"
SSD-4	1/4"	4"	1/4"	7 3/4"
SSD-6	5/16"	6"	5/16"	10 1/4"
SSD-8	3/8"	8"	3/8"	12 7/8"
SSD-12	15/32"	12"	7/16"	17 1/2"

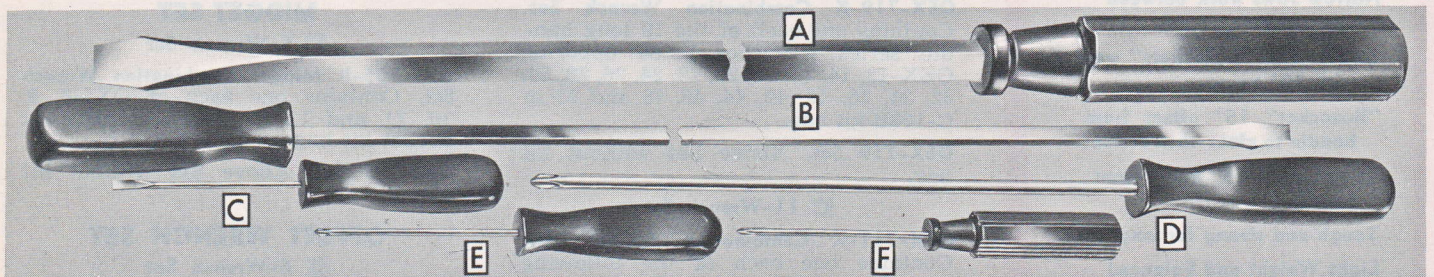
SSDS-60 Standard Screw Driver Set. One each of above 6 screw drivers.

SQUARE SHANK SERIES

Many industrial users prefer square bladed screw drivers . . . the square stock adds to the twisting strength and when tight screws are turned a wrench can be applied to give additional leverage. These drivers have precision cross ground tips and are highest quality throughout.

Stock No.	Blade Tip Width	Blade Length	Blade Stock	Overall Length
SSD-42	3/16"	2 3/8"	3/16"	5 7/8"
▲ SSD-44	1/4"	4"	1/4"	7 3/4"
SSD-46	5/16"	6"	5/16"	10 1/4"
SSD-48	3/8"	8"	3/8"	12 7/8"
SSD-412	7/16"	12"	7/16"	17 1/2"

SSDA-50 Standard Screw Driver Set. One each of above 5 screw drivers.



A SD-18 Heavy Duty Screw Driver. A powerful 18" blade screw driver . . . especially useful in industrial use for screw heads of 5/8" diameter and larger. The alloy steel blade has a 5/8" wide tip and is made of 1/2" square stock which can be turned with a wrench to move tight screws. The large "Octo-Grip" plastic handle gives plenty of leverage and is shock resistant.

B ★SSD-422 Extra Long Screw Driver. Slender 22" blade that gets to those hard-to-reach screws. Blade is 1/4" square stock, it is made from fine alloy steel and heat treated to give resilience to the shaft and hardness and toughness to the tip. Tip is cross ground to give the best fit and grip in the screw slot. Tip size is 5/16" x 1/32". Overall length of this screw driver is 25 1/4".

C SSD-234 Short Screw Driver. 3" long blade made of 5/16" diameter round stock with standard type tip 1/8" wide. Contour-Grip black plastic handle is shock-resistant.

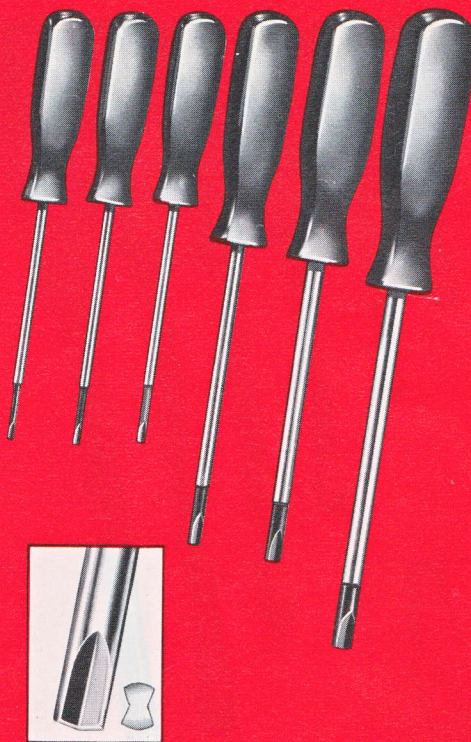
D ★SSDP-102 Long Phillips Screw Driver. A No. 2 Phillips bit on a 9 3/4" long blade. This is over twice the length that most No. 2 bit drivers provide and reaches into deep recesses. Superior alloy steel round blade is 1/4" diameter. Overall length is 13 1/2". Plastic handle is shock-proof.

E ★SSDP-319 Thin Phillips Screw Driver. A No. 1 Phillips bit on a 3 1/4" blade securely anchored in a Contour-grip, black plastic, shock resistant handle. The blade is round and is 1/8" in diameter..

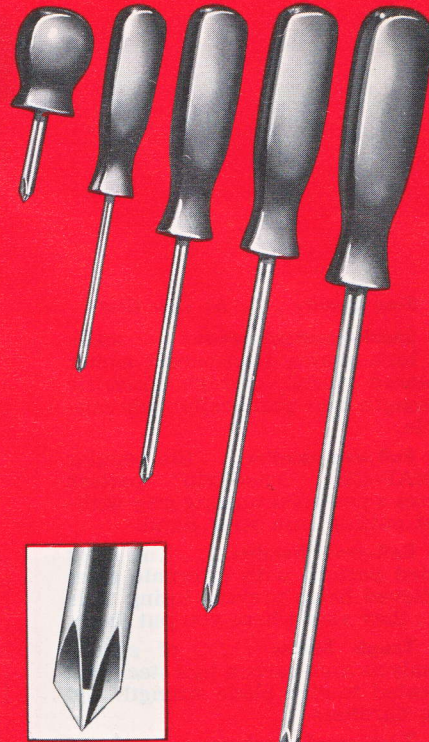
F ★SDEP-30 Very Thin Phillips Screw Driver. No. 0 Phillips bit on a 3" long blade that is firmly anchored in a black plastic handle. Basic square shape handle has rounded edges and longitudinal serrations to provide a firm, comfortable grip and also has a smooth end recess for finger pressure application during turning operations. This driver is needed on many intricate assembly jobs.



PHILLIPS TIP



CLUTCH-TYPE TIP



REED & PRINCE

Snap-on PHILLIPS DRIVERS

This is our finest line of Phillips screw drivers. They are built with superior alloy steel blades specially heat treated to give the wear resisting qualities needed for turning self-tapping screws. The blades have high buffed finish. Avoid damage to bits and screws by using the proper size bit and by cleaning dirt out of the screw recess.

Stock No.	Phillips Bit	Blade Length	Blade Diameter	Overall Length
▲ ★SSDP-21	#1	1"	3/16"	23 3/4"
▲ ★SSDP-22	#2	1 1/2"	1/4"	31 1/4"
▲ ★SSDP-31	#1	3"	3/16"	57 3/8"
▲ ★SSDP-42	#2	4"	1/4"	73 3/4"
▲ ★SSDP-63	#3	6"	5/16"	101 1/4"
▲ ★SSDP-64	#4	6"	3/8"	101 3/16"

★SSDP-60 Phillips Screw Driver Set, one each of above screw drivers.

Snap-on CLUTCH DRIVERS

Top grade quality screw drivers for turning screws of the clutch-bit type. These screws are also commonly referred to as figure-8 or butterfly screws. Blades are high grade alloy steel and the bit ends are machined to close tolerances to fit accurately in the screw head recess. Careful heat treatment gives these tips exceptional strength.

Stock No.	Blade Tip	Blade Length	Blade Diameter	Overall Length
★SSDC-4	1/8"	4"	5/32"	67 3/8"
★SSDC-5	5/32"	4"	5/32"	67 3/8"
★SSDC-6	3/16"	4"	11/64"	71 1/4"
★SSDC-8	1/4"	5"	15/64"	83 3/4"
★SSDC-10	5/16"	5"	19/64"	91 1/4"
★SSDC-12	3/8"	6"	13/32"	101 3/4"

★SSDC-60 Clutch-type Screw Driver Set. One each of above screw drivers.

Snap-on R. & P. DRIVERS

Among the various types of recessed head screws now in common use throughout industry is the Reed and Prince cross-slot screw. This type of screw should not be confused with the Phillips screw for there is a great difference in the slots. Compare them closely and you will see that each requires a special and different type of screw driver. Blades are high grade alloy steel, carefully machined and heat treated.

Stock No.	Blade Tip	Blade Length	Blade Diameter	Overall Length
★SSDR-1	1/4"	1 1/2"	1/4"	31 1/4"
▲ ★SSDR-3	3/16"	2 1/2"	3/16"	53 3/8"
▲ ★SSDR-4	1/4"	4"	1/4"	77 3/8"
▲ ★SSDR-6	5/16"	6"	5/16"	101 1/4"
▲ ★SSDR-8	3/8"	8"	3/8"	127 3/8"

★SSDR-50 Reed and Prince Screw Driver Set. One each of above screw drivers.

THIN BLADE SCREWDRIVERS

Excellent for all Electrical work

Here are real timesaving tools for electrical and electronic assembly and maintenance, or any other limited space work. Thin driver blade tip is the same width as the shank diameter, to follow screw below surface or work among intricate assemblies. Blades are made from extra-tough alloy steel for long life. Tips are precision-machined to seat properly in screw slots to prevent slippage and damage. Crimped shanks anchor firmly to prevent turning in handles. Plastic handles are comfortable to hold, have a high dielectric strength and are practically unbreakable. Handle end has a smooth round recess for finger pressure during the screw turning operation.

A With 1/8" Blade and Tip

Stock Number	Blade Length	Weight
SDE-42	2"	1 oz.
SDE-43	3"	1 oz.
SDE-44	4"	1 oz.
SDE-46	6"	1 oz.
SDE-48	8"	2 oz.

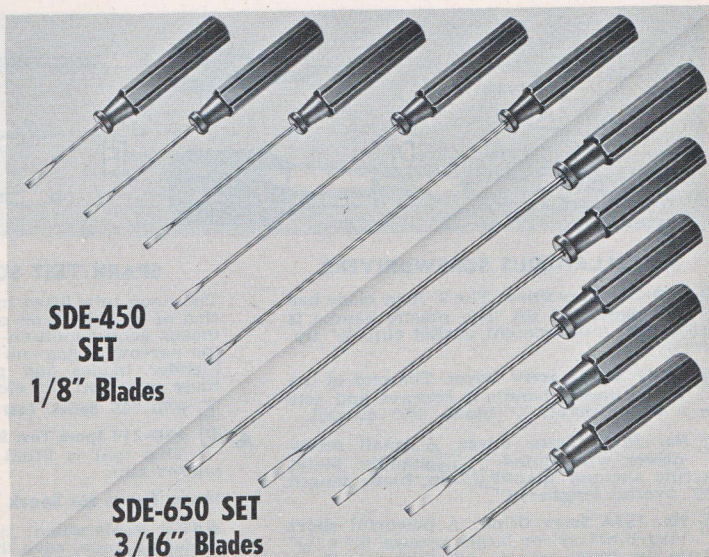
SDE-450 Set of 5 Thin Blade Screwdrivers with 1/8" Blade.

B With 3/16" Blade and Tip

Stock Number	Blade Length	Weight
▲ SDE-63	3"	1 oz.
▲ SDE-64	4"	2 oz.
▲ SDE-66	6"	2 oz.
▲ SDE-68	8"	2 oz.
SDE-610	10"	2 oz.

SDE-650 Set of 5 Thin Blade screwdrivers with 3/16" blade.

SDE-100 Set of 10 Thin Blade Screwdrivers consisting of all ten Thin Blade Screwdrivers listed above.



SDE-450 SET
1/8" Blades

SDE-650 SET
3/16" Blades

Snap-on

"PAR-V" SCREW DRIVERS

Fine Quality . . . At Low Cost

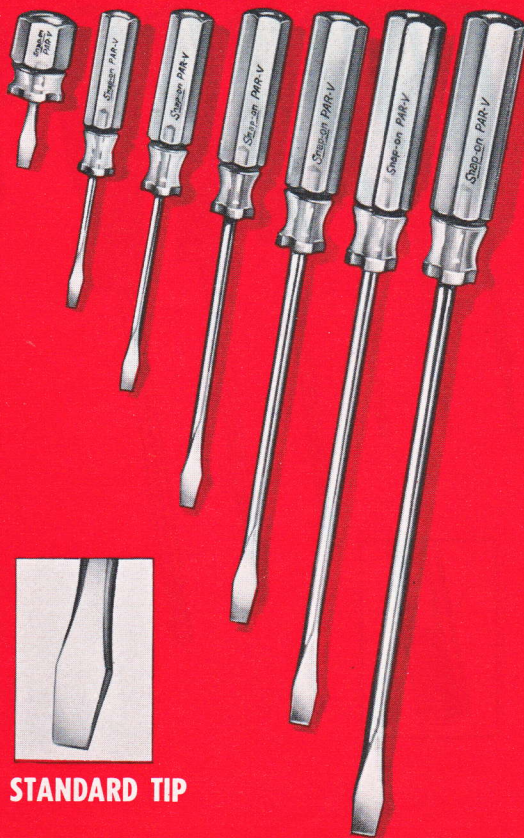
● **Shock-resistant handles** . . . made of high quality transparent amber colored plastic, of high dielectric strength and practically unbreakable.

● **Full size handles** . . . the popular SNAP-ON "Octo-Grip" pattern gives a powerful turning grip without cutting into your hand.

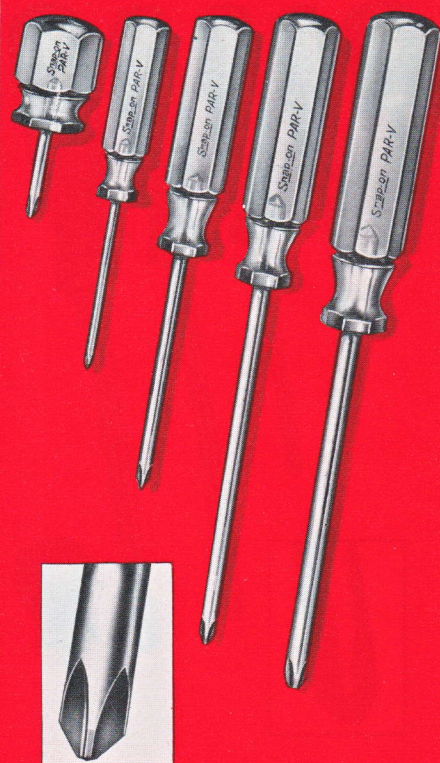
● **Roll-proof handles** . . . The eight sided pattern with alternate sides relieved helps prevent losing tools . . . they stay where you put them.

● **Tough Blades** . . . of special analysis high carbon tool steel heat treated to give blade strength and tip hardness.

● **Turn-proof anchors** . . . Long crimped shank wings prevents blades from turning in the handles.



STANDARD TIP



PHILLIPS TIP

Snap-on "PAR-V" SCREW DRIVERS

SOCKET-TYPE SCREW DRIVERS

Tool users who require socket-type screw driver bits for manual use on socket wrench handles or need special screw driving bits for use on impact wrenches or power nut runners are referred to the following pages:

Impact driver bits.....page 43
Power Phillips bits..... pages 19, 43
Manual-type bits.....pages 19, 23
25, 27, 29, 35, 43

REPLACEMENT BLADES

Replacement blades are available for SNAP-ON "Supreme" and "Par-V" series screw drivers. Information is available upon request.

STANDARD TIP SERIES

Provide fine quality and durability at a low cost. Tips are tapered, cross ground and machined to fit closely and give the greatest possible turning strength. Always use the proper size driver to protect both blade tip and screw head.

Stock No.	Blade Tip Width	Blade Length	Blade Diameter	Overall Length
★RG-1	1/4"	11 1/2"	1/4"	31 1/4"
★RG-2	3/16"	21 1/2"	7/32"	53 1/4"
★RG-4	1/4"	4"	1/4"	7 3/4"
★RG-6	5/16"	6"	5/16"	10 1/4"
★RG-8	3/8"	8"	3/8"	12 7/8"
★RG-10	3/8"	10"	3/8"	14 7/8"
★RG-12	13/32"	12"	13/32"	16 7/8"

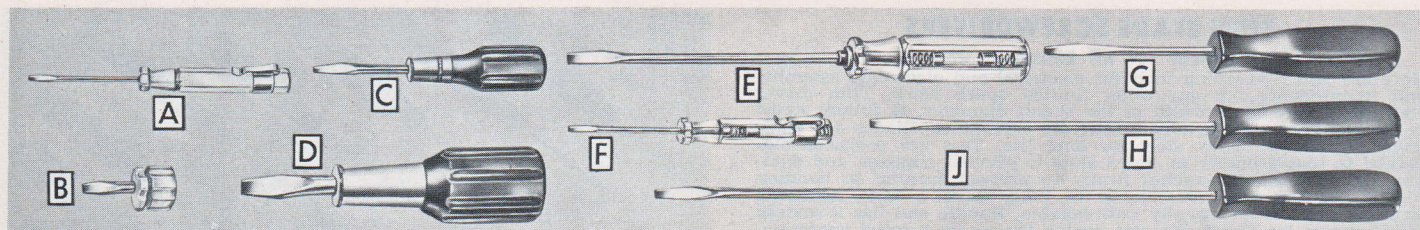
★RGS-70 "Par-V" Standard Set. All seven of the screw drivers listed above.

PHILLIPS TIP SERIES

High quality alloy steel blades accurately machined to fit properly, heat treated to give long service and given a black finish. Recommended for general purpose assembly and maintenance. For turning hardened self tapping screws we recommend the series of Phillips drivers on page 63.

Stock No.	Phillips Bit	Blade Length	Blade Diameter	Overall Length
★RGP-22	#2	11 1/2"	1/4"	31 1/4"
★RGP-31	#1	3"	3/16"	5 7/8"
★RGP-42	#2	4"	1/4"	7 3/4"
★RGP-63	#3	6"	5/16"	10 1/4"
★RGP-84	#4	8"	3/8"	12 7/8"

★RGP-50 "Par-V" Phillips Set. All five of the screw drivers listed above.



MISCELLANEOUS SCREWDRIVERS

A ★SD-204 Screw Driver. The 2" long blade has a magnetized tip. The plastic handle is fitted with a convenient pocket clip. 1/8" tip, length 4 5/8".

B SD-11 Stubby Screw Driver. The end of the fluted plastic handle is concave and acts as a finger pivot. 3/8" blade, 1 1/8" overall.

C No. 181 1/2 Screw Driver. A small screw driver with fluted handle. Metal ferrule anchors ~~DISCONTINUED~~ 1/2" tip, blade length 1 1/2" overall length 4 1/4".

D No. 153A Screw Driver. A powerful short bladed driver for larger screws. 3/4" x 1/16" blade tip, blade length 1 3/4", 5 1/2" overall.

SPARK TEST SCREW DRIVERS

The neon tube fitted into handle tells condition of plug by type of flash. Brilliant flash means good condition—a thin flash indicates too narrow a gap—no flash means a short. Slender blades and plastic handles make these excellent for electrical work.

E ★SD-145 Spark Test Driver, 5 1/4" blade.

▲ F ★SD-214 Spark Test Screw Driver. 2 1/4" blade. This tool is fitted with a conventional pocket clip.

Neon Tubes for Spark Testing Screw Drivers

★NT-2 Replacement tube for above. When replacing tube, save the original springs in handle, as none are included with tubes.

CABINET SCREW DRIVERS

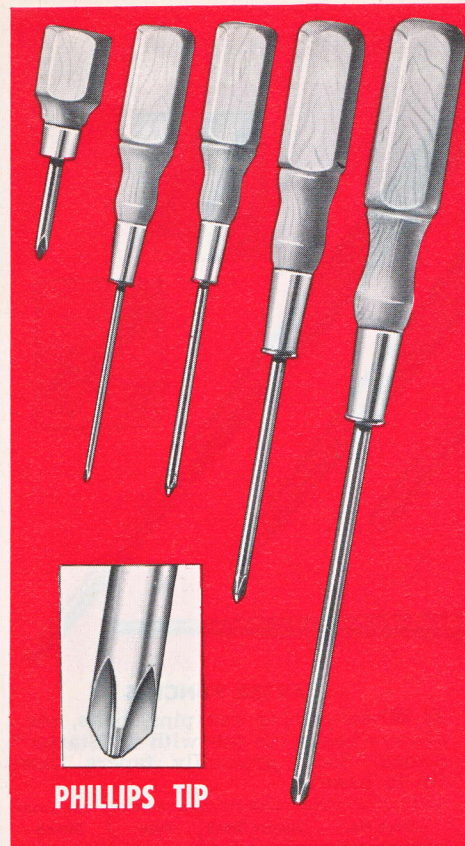
The long, thin blades of special high test alloy steel, carefully heat treated, give tough working tips and strong resilient shanks. Excellent where there is little clearance or where long reach is needed to turn small screws. Blades are 3/16" round stock, handles are black plastic. They are especially recommended for electrical and body work.

G SSD-143 Screw Driver. 3" Blade.

H SSD-146 Screw Driver. 6" Blade.

J SSD-1410 Screw Driver. 10" Blade.

SCD-30 Screw Driver Set. One each of above screw drivers.



PHILLIPS TIP

PHILLIPS SCREW DRIVERS

Good quality at low cost. Blades made from fine quality steel tempered to give utmost service and have sand blasted finish. Heavy steel ferrules anchor blades in hardwood handles.

Stock Number	Phillips Bit	Blade Length	Blade Diameter	Overall Length
★SDWP-241	#2	1 1/2"	1/4"	3 1/16"
★SDWP-133	#1	3"	5/16"	7"
★SDWP-123	#1	3 1/4"	1/8"	7 1/4"
★SDWP-244	#2	4"	1/4"	9 1/4"
★SDWP-355	#3	6 1/8"	5/16"	12 1/4"

★SDWP-50 Phillips Set. All five Screw Drivers listed above.

OFFSET SCREW DRIVERS

- [C] ★H-50B Hammer Head Screw Driver. 6" long, the blades are 1/2" x 1/16".
- [D] ★ST-034A Phillips Offset Screw Driver. 3" long. No. 3 and No. 4 bits.
- [E] ★ST-012A Phillips Offset Screw Driver. 3" long. No. 1 and No. 2 bits.
- [F] ★040 Offset Screw Driver. 5 1/2" long, 3/8" stock, blades 3/8" x 3/64".
- [G] ★030 Offset Screw Driver. 5" long, 5/16" stock, blades 5/16" x 1/32".
- [H] ★020 Offset Screw Driver. 4" long, 1/4" stock, blades 1/4" x 1/32".



MAGNETIC SCREW DRIVER SETS

A powerful Alnico magnet anchored in the hollow shaft holds the bits in the shaft, making them easy to interchange and magnetizes the bit for holding and starting steel screws. One bit remains in the magnetic shank while others are carried in the hollow handle under the plastic cap. When tip wears you do not throw away the entire screw driver—just replace the tip. Handle is plastic.

SDM-40 Magnetic Screw Driver Set. Contains handle with 4" shank and 4 bits, SDM-211, SDM-213, SDM-221, SDM-222.

SDM-80 Magnetic Screw Driver Set. Contains handle with 8" shank and 4 bits, SDM-211, SDM-213, SDM-221, SDM-222.

SDM-211 S'd Bit. .031" x 3/16" tip.

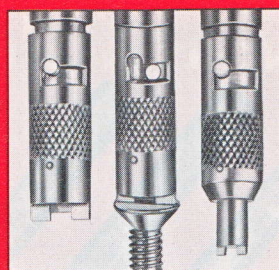
SDM-212 S'd Bit. .035" x 1/4" tip.

SDM-213 S'd Bit. .040" x 1/4" tip.

SDM-221 Phillips Bit. No. 1 tip.

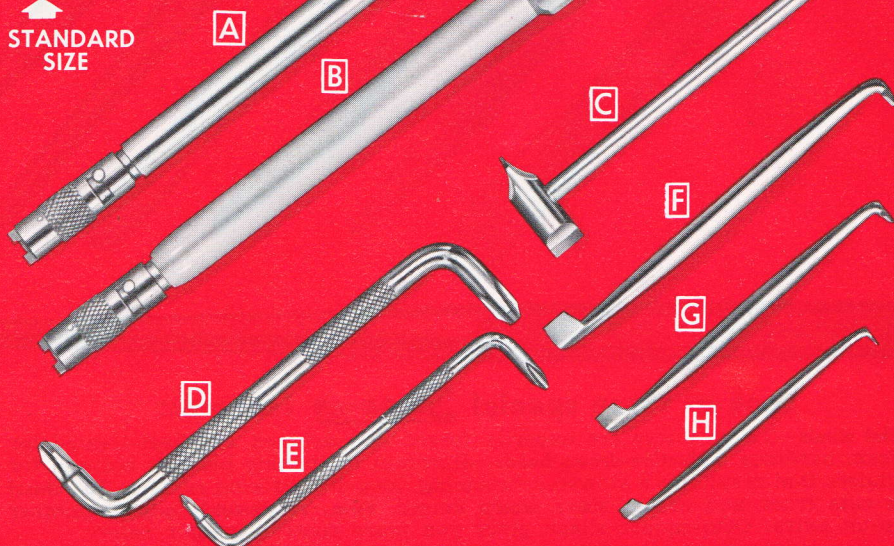
SDM-222 Phillips Bit. No. 2 tip.

SDM-231 Reed and Prince Bit.



STANDARD SIZE

SMALL SIZE



SCREW STARTERS FOR STANDARD SLOTTED SCREWS

The spring loaded high carbon steel bit grips the walls of the screw slot so tightly that it will withstand an eight-pound pull . . . yet automatically releases when screw turning pressure reaches a certain tension. This safety feature protects the screw-starter from damage. There are no claws or sliding ferrules to hit against obstructions and the slender handles reach into close places. The standard sizes have blades 5/32" wide and .032" thick. Small sizes have blades 1/32" wide and .020" thick.

A With Aluminum Handles

Standard Size	Small Size	Overall Length
★GA-11	★GA-229	2 1/2"
★GA-12	★GA-230	5 1/4"
★GA-13	★GA-231	9 1/2"
★GA-215	—	15"

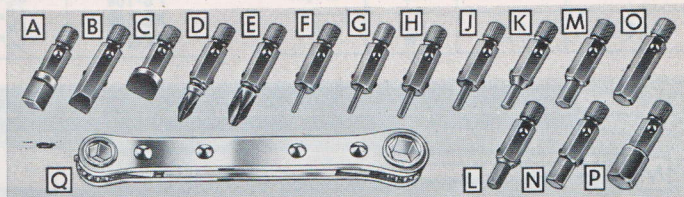
★SS-40 Set. One each of the four standard size screw starters listed above.

B With White Nylon Handles

Standard Size	Small Size	Overall Length
★GA-11N	★GA-232	2 1/2"
★GA-12N	★GA-233	6"
★GA-13N	★GA-234	9"

★SS-30N Set. One each of above three standard size screw starters listed above.

[K] ★GA-109 Magnetic Handle Screw Starter. This dual purpose tool is very useful for starting screws and for retrieving screws, washers, etc. in hard-to-reach places. Similar to GA-13N but has magnet in end of handle. 9" long.



RATCHETING OFFSET SCREW DRIVER BITS

The combination of Ratchet-Boxocket and adaptors provide an offset ratcheting screw driver for many uses where space is limited. 1/4" hex center section fits "Boxocket."

	Stock No.	Description		Stock No.	Description
[A]	★CM-14	1/4" Square Drive	[J]	★CMS-6	3/32" Hex Driver
[B]	★CM-17	1/4" Screw Driver	[K]	★CMS-8	1/8" Hex Driver
[C]	★CM-19	3/8" Screw Driver	[L]	★CMS-10	5/32" Hex Driver
[D]	★CMP-20	#1 Phillips	[M]	★CMS-12	3/16" Hex Driver
[E]	★CMP-21	#2 Phillips	[N]	★CMS-14	1/2" Hex Driver
[F]	★CMS-3	.050 Hex Driver	[O]	★CMS-16	1/4" Hex Driver
[G]	★CMS-4	1/16" Hex Driver	[P]	★CMS-18	5/16" Hex Driver
[H]	★CMS-5	5/64" Hex Driver	[Q]	R-810	1/4" & 5/16" Ratchet

★CMS-160K Ratcheting Offset Screw Driver Set, consisting of all 14 Adaptors above with R-810 Ratchet, in C-20 kit bag.

Snap-on®

CHISELS AND PUNCHES ARE STRONG AND DURABLE



Look at these special *Snap-on* features:

Special steels—Tough alloys are expertly forged and heat-treated for uniform hardness. **Induction-drawn heads**—Hardness in striking heads is reduced for toughness that results in a slow-mushrooming, long-life striking surface. **70° chisel edge** cuts truer and easier, stays sharp longer. **Firm, comfortable grip** is another Snap-on extra. Octo-square shape gives you more control, greater safety.

FLAT CHISELS

A Perfectly balanced. Have hand-ground cutting edges beveled at the best angle for long edge life and fast cutting on the average type of work. Can be re-edged with a file quickly when necessary.

Stock No.	Square Stock	Edge	Length
PC-812	3/8"	13/32"	5 1/2"
PC-816	7/16"	1 1/2"	6"
PC-820	1 1/2"	5/8"	6 1/2"
PC-824	5/8"	3/4"	7 1/4"
PC-828	1 1/8"	7/8"	8"

B CAPE CHISELS

Stock No.	Square Stock	Edge	Length
★PC-13	5/16"	1/4"	5 5/8"
★PC-14	3/8"	5/16"	6"

C ROUND NOSE CAPE CHISEL

Stock No.	Square Stock	Edge	Length
★PC-12	3/8"	5/16"	6"

D DIAMOND POINT CHISELS

Stock No.	Square Stock	Edge	Length
PC-15	7/16"	7/32"	6"
PC-19	3/8"	1/8"	5 3/4"

CENTER PUNCHES

E Forged from tough steel, heat treated and tempered for hardness.
PC-3C 1/8" Point Taper, 5" Length.
PC-4C 3/16" Point Taper, 6" Length.

DRIFT PUNCHES

F Use a Starter Punch to loosen the pin or bolt and finish removal with a Drift Punch. The full length of shaft is the same diameter.

Stock No.	Square Stock	Point	Length
★PC-103	9/32"	3/32"	4 1/4"
★PC-104	5/16"	1/8"	4 3/4"
PC-105	3/8"	3/32"	5"
PC-106	3/8"	3/16"	5 1/4"
PC-108	7/16"	1/4"	5 3/4"
PC-110	1/2"	5/16"	6 1/4"

STARTER PUNCHES

G When driving out pins, bolts, etc., always begin the job with a "Starter" punch. Shaft gradually tapers from tip to handle.

Stock No.	Square Stock	Point	Length
★PC-203	5/16"	3/32"	5 1/4"
PC-204	3/8"	1/8"	5 3/4"
PC-205	3/8"	5/32"	6"
PC-206	7/16"	3/16"	6 1/4"
PC-208	1 1/2"	1/4"	6 3/4"
PC-210	9/16"	5/16"	7 1/4"

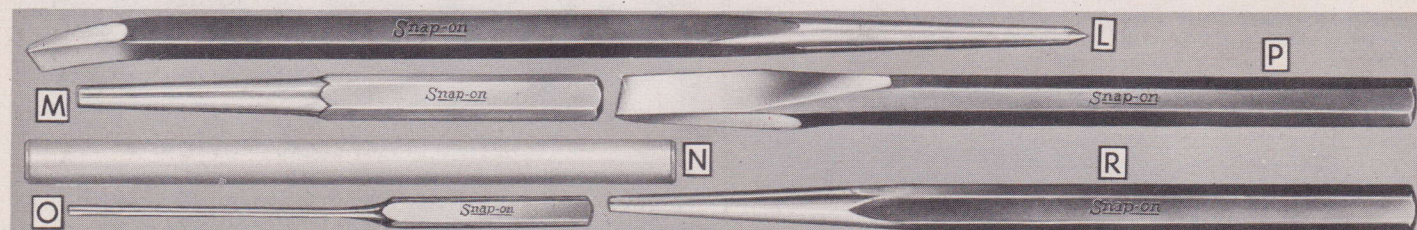
LONG TAPERED PUNCHES

H These punches are invaluable for all kinds of lining up work... carefully drop forged and finished to give long, lasting service.

Stock No.	Square Stock	Point	Length
PC-905	3/8"	3/16"	8"
PC-908	7/16"	1/4"	8 1/2"
PC-910	1 1/2"	5/16"	9"
PC-912	9/16"	3/8"	9 1/2"

LONG LINING-UP PUNCH

J ★PC-714 Here is a long lining-up punch especially designed for assembly work. Center point can be used for punching holes in metal. 9/16" square stock, 5/32" point, 9 13/16" taper, 14" overall length.



PINCH BARS

L SNAP-ON pinch bars are hammer forged from high grade alloy steel tempered for great strength. Tapered point end makes a sturdy lining-up tool.

No.	Stock	Edge	Length
1658	1 1/2"	5/8"	16"
2434	3 3/4"	3/4"	24"

NON-SPARKING BRASS PUNCHES

For driving out an object without damaging it or when sparks from a steel punch would be dangerous. Brass mushrooms easily and should be dressed frequently.

M B-912 Brass Punch. 8" Long, 5/8" hex stock tapering to a 3/4" point.
N N-6578 Brass Punch. 10" Long, 3/4" diameter round stock with chamfered ends.

LONG DRIFT PUNCH

O PC-107L Long Drift Punch. 8" overall, has a straight drift section 5/32" diameter and 4 1/2" long. Useful for driving out long pin holding counter shaft and reverse idler shaft in Ford 3-speed transmissions.

LONG FLAT CHISELS

P Useful wherever long reach is needed.

No.	Stock	Edge	Length
1020	5/8"	3/4"	11"
1024	3/4"	7/8"	12"
1628	3 1/4"	1 5/16"	16"
1832	7/8"	1"	18"

LFC-40 Set. Above 4 tools only.

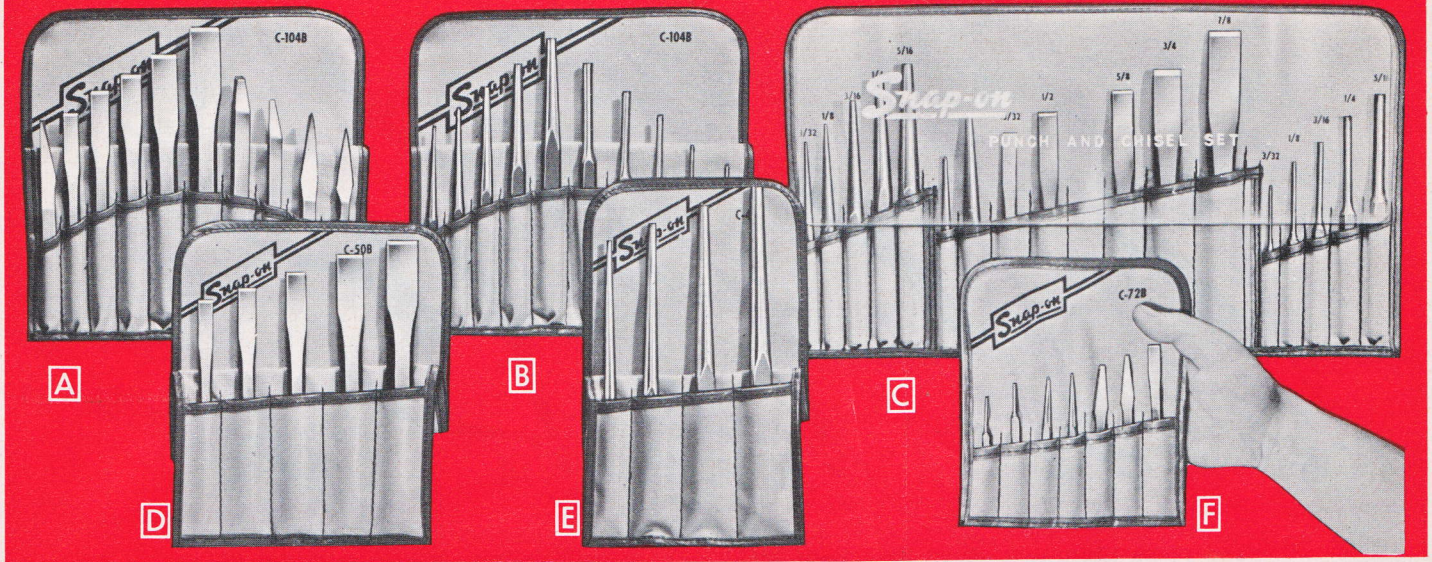
LONG PUNCHES

R For heavy duty industrial work. Highest quality.

No.	Stock	Tip	Taper	Length
1210	5/8"	5/16"	4"	12"
1512	3/4"	3/8"	5"	15"
1816	7/8"	1/2"	6"	18"

LP-30 Set. Above 3 tools only.

CHISELS AND PUNCHES IN FULL SETS ARE CONVENIENT



IMPORTANT. All chisels or punches, including SNAP-ON products are subject to wear, misuse or unsafe usage. Always wear safety goggles or safety glasses when using such tools. SNAP-ON chisels and punches are heat-treated softer at the striking end than at the cutting edge or point. The softer metal contributes to a controlled "mushroom" effect with less chance of chipping or splitting . . . As

the metal spreads grind the striking end to its original size and shape for added protection against accidents. Keep chisels edges sharp and punch ends flat—do all grinding on a wheel equipped with coolant to help avoid overheating the metal. Always use the proper size punch and hold it in direct line to the pin being driven. Proper tool care and usage helps prevent injuries.

BUY **Snap-on** CHISELS AND PUNCHES IN FULL SETS

Complete Chisel Set

A PC-100-K Set. Consists of ten chisels: PC-812, PC-816, PC-820, PC-824 and PC-828 Flat Chisels; PC-12 Round Nose Cape Chisel; PC-13 and PC-14 Cape Chisels and PC-15 and PC-19 Diamond Point Chisels complete in C-104B kit bag.

PC-100 Set. Above Set without kit bag.

Starter and Drift Punch Set

B PSD-100-K Set. Consists of ten tools: five Starter Punches: PC-203, PC-204, PC-206, PC-208 and PC-210, and five Drift Punches: PC-103, PC-104, PC-106, PC-108 and PC-110 complete in C-104B kit bag.

PSD-100 Set. Above Set without kit bag.

Chisel and Punch Set

C PC-170K Set. Consists of seventeen tools, the ones most needed for general work: PC-812, PC-816, PC-820, PC-824 and PC-828 Flat Chisels; PC-203, PC-204, PC-206, PC-208 and PC-210 Starter Punches; PC-103, PC-104, PC-106, C-108 and PC-110 Drift Punches and PC-3-C and PC-4-C Center Punches complete in C-170C kit bag. A chisel gauge is also included.

PC-170 Set. Above Set without kit bag.

Flat Chisel Set

D PC-50-K Set. Consists of five chisels: PC-812, PC-816, PC-820, PC-824 and PC-828 complete in C-50B kit bag.

PC-50 Set Above Set without kit bag.

Long Tapered Punch Set

E PLT-40K Set. Consists of four punches: PC-905, PC-908, PC-910 and PC-912 in C-42B kit bag.

PLT-40 Set. Above Set without kit bag.

Drift Punch Set (Not Shown)

PCD-60-K Set. Consists of 6 Drift Punches, PC-103, PC-104, PC-105, PC-106, PC-108, and PC-110 in 64-B kit bag.

PCD-60 Set. Above Set without kit bag.

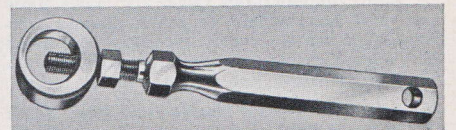
Starter Punch Set (Not Shown)

PCS-60-K Set. Consists of 6 Starter Punches, PC-203, PC-204, PC-205, PC-206, PC-208 and PC-210 in C-64-B kit bag.

PCS-60 Set. Above Set without kit bag.

Midget Punch and Chisel Set

F PVP-70-K Set. Consists of seven midget punches and chisels, $\frac{1}{32}$ " Square stock. Ideal for many tiny jobs. Includes ★PC-402 Drift Punch 3" long, $\frac{1}{16}$ " pt., ★PC-403 Drift Punch $3\frac{1}{4}$ " long, $\frac{1}{8}$ " pt., ★PC-404 Center Punch $3\frac{1}{4}$ " long, ★PC-405 Starter Punch $3\frac{1}{4}$ " long, $\frac{1}{16}$ " pt., ★PC-406 Cape Chisel $3\frac{1}{4}$ " long, $\frac{3}{16}$ " edge, ★PC-407 Round Nose Cape Chisel 4" long, $\frac{3}{32}$ " wide and ★PC-408 Flat Chisel $4\frac{1}{4}$ " long, $\frac{1}{16}$ " edge, complete in C-72B kit bag.

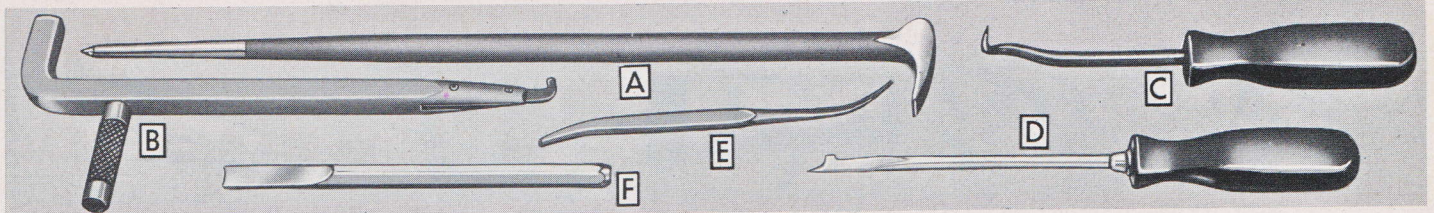


CHISEL AND PUNCH HOLDER

CG-50 Holder (Above). Saves bruised knuckles and prevents tool from dropping into hard-to-reach spots. It grips any tool or other item up to 1" diameter. Insert the tool to be held and tighten the handle and the lock nut. $8\frac{1}{2}$ " long, $1\frac{1}{8}$ " head diameter, $\frac{1}{16}$ " head thickness.

CG-50-1 Handle and lock nut. **CG-50-2** Head only.

TOOLS IN FULL SETS GIVE YOU THE RIGHT TOOL FOR EVERY JOB



PRY BARS

A Rolling head exerts tremendous leverage for prying work . . . often used for prying out gears, etc. Point useful for lining-up work. Forged from fine alloy steel.

No. 650 6" Pry Bar. $\frac{5}{16}$ " diameter stock.
No. 1250 12" Pry Bar. $\frac{7}{16}$ " diameter stock.
No. 1650 16" Pry Bar. $\frac{9}{16}$ " diameter stock.
No. 2050 20" Pry Bar. $\frac{1}{16}$ " diameter stock.

B ★S-9094B Cotter Pin Puller. Insert hook end into cotter pin. Hit anvil end sharply, out comes pin. Hook is of tough steel pinned in place and can be replaced easily. Over-all length is 10". Side handle gives a good grip.
★S-9094A2X Hook and rivet set.

C ★CP-3A Cotter Pin Puller. Point of the blade is inserted into the loop of the pin and the pin jerked out. One of the bends can be used as a rolling head to build up leverage to pull even larger pins easily. Forged blade is specially heat treated for utmost strength. Overall length 8".

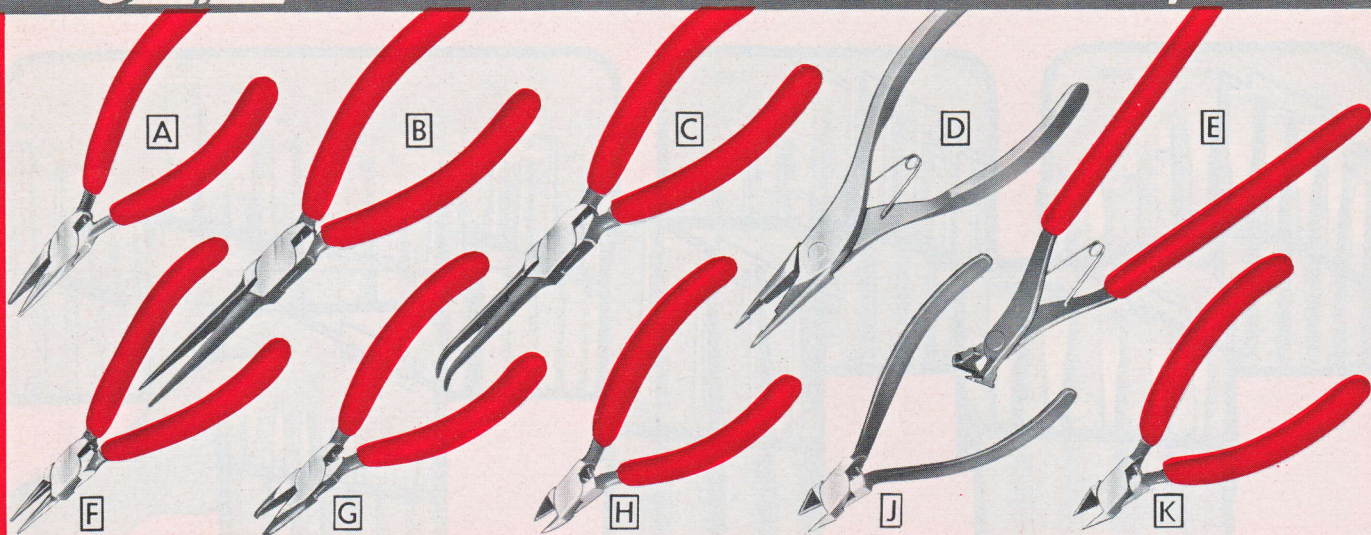
COTTER PIN TOOLS

D ★CP-6A Cotter Pin Remover. One of the best tools ever designed for removing cotter pins where space and obstructions make it very difficult to get at them. The pointed tip is inserted into the pin eye and a few blows on the end of the plastic handle with the palm of the hand is usually sufficient to jerk the pin out. The blade edge or hook is useful for spreading the pin after insertion.

E ★S-6P Cotter Pin Tool. An excellent tool for spreading and removing cotter pins . . . can also be used to great advantage for inserting water pump packings, etc. Forged with square bevel shank for easy handling and firm grip. $6\frac{7}{8}$ " long, $\frac{5}{16}$ " stock.

BUSHING CUTTER

F ★GA-1 Bushing Cutter. For splitting soft metal bushings in housings, steering sectors, spindles, pistons, connecting rods, etc., made from $\frac{1}{4}$ " octagon stock, $7\frac{1}{4}$ " long, $\frac{1}{16}$ " by $\frac{3}{16}$ " bit. Curved bit pushes the cut material away from the work. Makes it very easy to remove such bushings without damage to other parts and gets the job done fast.



The pliers illustrated above have been specially designed for the electronic industry. All are made of special alloy steel and have been selectively heat treated for maximum strength and jaw hardness. Precise machining and carefully controlled riveting assures

easy, wobble-free action, retention of jaw alignment and accurate mating of jaw tips. Most of these pliers are provided with baked-on plastic handle coating. Plastic jaw inserts are heat-bonded into some of the cutters as described below.

A ★No. E-708 Midget Needle Nose Pliers. $\frac{7}{8}$ " jaw length. Plastic coated handles are fitted with a coil spring for easy operation.

B ★No. E-701— $\frac{6}{16}$ " Needle Nose Plier. Non-serrated jaws are $2\frac{3}{16}$ " long, with extra slim taper and $\frac{1}{16}$ " tip width. Handles have plastic coating and are fitted with a coil spring for fast, easy operation.

B ★No. E-703— $\frac{6}{16}$ " Needle Nose Pliers. Same as the E-701 except that the jaws are finely serrated for positive gripping action.

C ★No. E-702—Bent Needle Nose Pliers. Extra Slim, non-serrated jaws. $2\frac{1}{4}$ " jaws have the nose bent at 45° to reach around corners. Tips are $\frac{1}{16}$ " wide. Handles have fitted coil spring for easy operation and are plastic coated. Tool has $6\frac{1}{32}$ " overall length.

C ★No. E-704—Bent Needle Nose Plier. Same as the E-702 except that jaws have finely serrated tips.

D No. 951S $\frac{5}{16}$ " Electronic Gripper Cutter with spring handle. Tip length is $1\frac{1}{8}$ " with cutting blades set only $\frac{7}{32}$ " from the tip end. This special design cutter reaches wires where no other type can operate and is an excellent tool for electronic, radio assembly work, etc. Spring may be removed if not

wanted. Joint, jaws and cutter tips are precision machined and heat treated.

E ★No. E-706—Flush Cutting End Nipper. $\frac{6}{16}$ " overall length, $\frac{3}{16}$ " cutter length. Jaws and cutters specially heat treated. Removable heavy duty handle spring speeds the opening action. Plastic coated handles.

F No. E-700 Wire Looper Plier. $4\frac{1}{32}$ " long. Round, non-serrated jaws are $\frac{3}{4}$ " long and tapered from $\frac{7}{32}$ " to a tip diameter of $\frac{3}{64}$ ". Handles are fitted with a coil spring and have plastic coated handles.

G ★No. E-705—End Cutter. $4\frac{1}{2}$ " overall length. $\frac{3}{4}$ " long jaws taper to a $\frac{1}{8}$ " wide tip with flush cutting blades. Handles have plastic coating.

H ★No. E-707 $\frac{4}{16}$ " Flat True-Flush Cutting Plier. Cutting blades are perfectly flat and parallel with the handles. This precision tool can be damaged by abuse and should only be used where true flush-cuts are essential. Handles have plastic coating and are fitted with a coil spring.

Midget Electronic Cutters. Excellent for miniature assembly work. Thin, tapered cutting jaws work in the tightest places. A small hole at the base of the blades relieves pressure on the cutting edges and permits cut-

ting with the top $\frac{1}{8}$ " of the blades. Do not use this hole as a wire stripper. All of the following pliers are fitted with a coil spring for easy operation.

Plastic jaw inserts hold the cut-off ends of wire. Inserts and handle coatings are heat-bonded to the metal.

Note: The True-Flush models have extremely thin cutting edges and should only be used when a true flush-cut is important.

J ★No. 184D $\frac{4}{16}$ " Semi-Flush Diagonal Cutting Plier.

★No. 184D-J $\frac{4}{16}$ " Semi-Flush Diagonal Cutting Plier with plastic jaw insert.

J ★No. 184DD $\frac{4}{16}$ " True Flush Diagonal Cutting Plier.

★No. 184DD-J $\frac{4}{16}$ " True-Flush Diagonal Cutting Plier with plastic jaw insert.

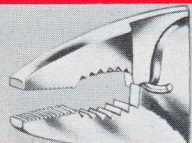
K ★No. 184D-P $\frac{4}{16}$ " Semi-Flush Diagonal Cutting Plier with plastic coated handles.

★No. 184D-PJ $\frac{4}{16}$ " Semi-Flush Diagonal Cutting Plier with plastic jaw insert and coated handles.

K ★No. 184DD-P $\frac{4}{16}$ " True-Flush Diagonal Cutting Plier with plastic coated handles.

★No. 184DD-PJ $\frac{4}{16}$ " True-Flush Diagonal Cutting Plier with plastic jaw insert and coated handles.

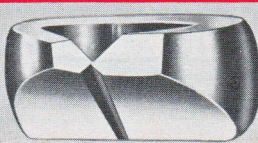
QUALITY FEATURES MAKE Snap-on PLIERS PERFORM BETTER AND WEAR BETTER



SNUB NOSE GRIPS CLOSE
CURVED CUTTER GRIPS WIRE



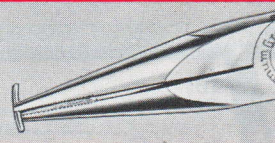
CURVED SECTION FOR
GRIPPING PIPE, ETC.



OVERLAP SHEAR ACTION
CUTS BETTER—SAVES EDGE



STAR CHAMFER STOPS
RIVET FROM TURNING



NEEDLE NOSE JAWS ARE
ALIGNED FOR SURE GRIP

GRIPPING PLIERS

Flat end permits plier to snub against objects and grip where rounded nose pliers would fail.

End gripping sections have parallel teeth or cross-cut teeth, depending on the plier model . . . provide a secure non-slip grip. Curved gripping sections have large, deep broached teeth to grip tightly on pipe and odd shape objects.

Stud positioning hole is broached to give a true bearing surface and a snug, easy working joint which reduces stud wear and chance of slippage. Curved wire cutters in gripping jaws overlap to provide non-slip action.

All SNAP-ON Pliers are hardened clear thru—not surface hardened only. Fast repair service is available to give your SNAP-ON Pliers longer service life.

NEEDLE NOSE AND CUTTING PLIERS

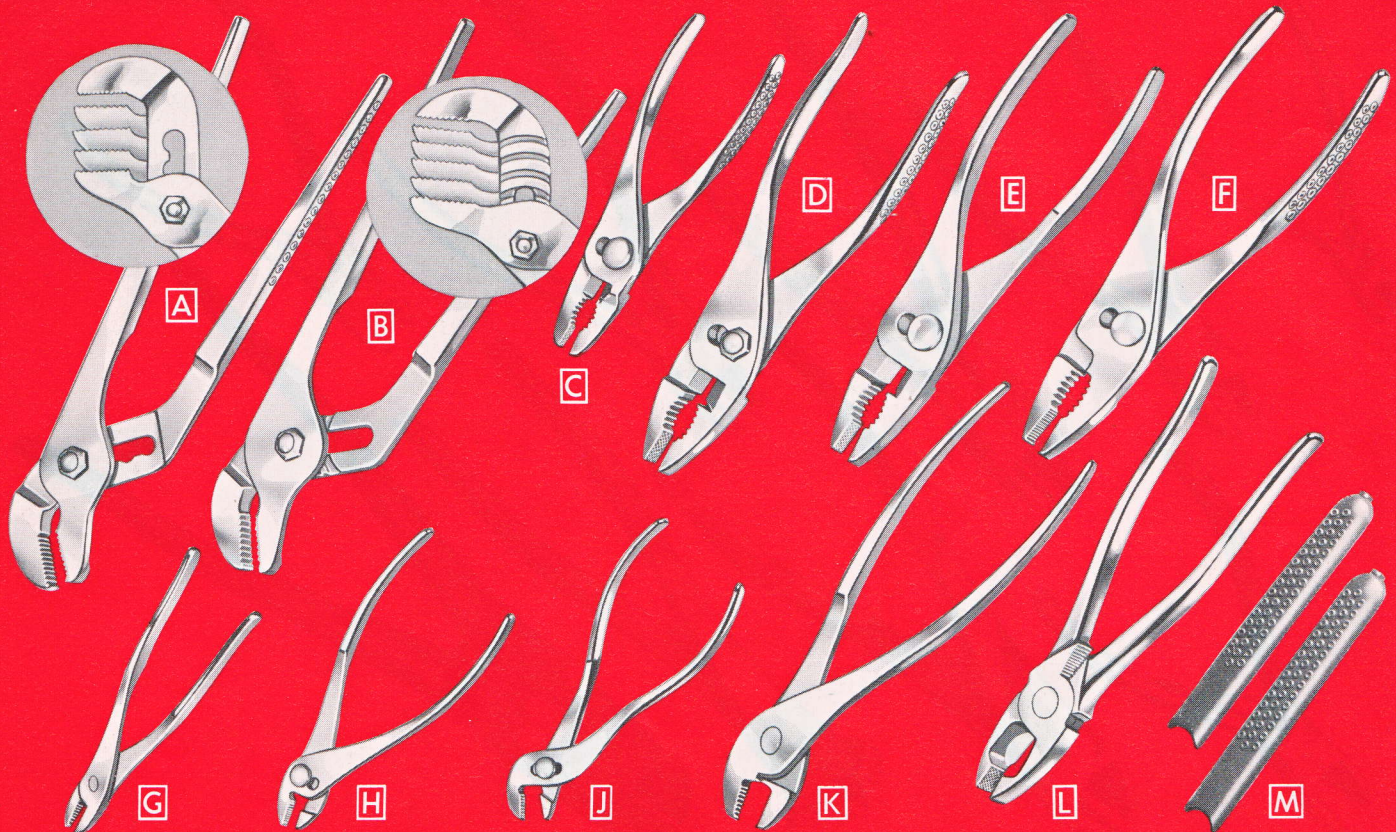
Rivet holes are drilled and reamed to remove burrs and assure easy operation . . . contributes to long plier life.

Star Chamfer—forms the rivet head and gives extra holding power to the rivet to prevent jaw looseness—holds jaws in alignment.

Joint surfaces and edges broached and ground to give smooth operation and snug fit . . . eliminate binding.

Electronically heated rivet is forced evenly and exactly into the surface contour of the chamfered hole . . . This assures a smooth joint operation and longer working life.

Cutting edges on standard type cutters are overlapped to give a shearing action. Cutters last longer because they never meet head-on.



A No. 9C Gripping Plier. The slip joint design has four spacer holes to permit quick non-slip adjustments and provide approximately parallel working positions of the jaws up to 1 3/4" opening.

The long handles give a firm, powerful grip with plenty of leverage to hold onto the object being serviced regardless of its shape, and the long reach is extremely useful on jobs where obstructions prevent entry of your hands. These handles have the raised "Vacuum Cup" pattern.

The jaws are slim . . . only 2 1/4" thick, but are heat treated to exceptional strength and toughness—they will enter narrow places where most pliers of this capacity cannot go. The 45° jaw angle provides easy working action in otherwise inaccessible places. Teeth are milled sharp and deep to take a firm grip on rods, pipes, etc. Entire tool is nickel and chrome plated. 8 3/4" long.

A No. 9CC Gripping Plier. Same design as No. 9C above but with partly polished, natural steel finish and smooth handles.

B No. 90 Interlocking Joint Gripping Plier. A raised curved section on one handle interlocks into either of five recessed grooves in the other handle . . . permits fast changes of parallel openings up to 1 3/4". The pressure side of the grooves is perpendicular to prevent "ride-under" or slipping. The slim 45° angle jaws are 2 1/4" thick for easy entry in tight spots but are heat treated to give unusual gripping strength. Deep cut teeth set at an angle give a firm grip on round objects, etc. Long handles provide powerful leverage and have the raised "Vacuum Cup" pattern. Tool is nickel and chrome plated and 9 1/4" long.

B No. 91 Plier. Same design as No. 90 above but with ball-blast finish and no pattern on handles. Chrome plated.

C No. 65 5 1/2" Light Combination Plier. An exclusive SNAP-ON design for general use . . . popular with flyers and airplane mechanics because of its slender design. Light in weight but built for heavy duty work . . . capacity far exceeds its size . . . Long thin pointed nose . . . powerful side cutters . . . 2-position slip-joint. Jaws provide flat serrated area for general gripping and curved area with deep cut teeth for gripping rods, etc. Nickel and chrome plated. Raised "Vacuum Grip" handle pattern.

D No. 137 Heavy Duty Combination Pliers. Combines powerful gripping leverage with easy cutting action. The 1 3/32" thick gripping jaws have a flat serrated gripping end section and a curved sharp tooth section for gripping pipe, etc. Slip joint has two positions and the countersunk stud allows cutting close to an object. Handles have raised "Vacuum Grip" cup pattern. Full nickel and chrome plated. 7 1/2" long.

E No. 137A Combination Pliers. Same head design as No. 137 above but with bow handles, fully polished natural steel finish and raised "Vacuum Cup" handle pattern.

E No. 137C Combination Pliers. Same head design as No. 137 above but with bow handles, no handle pattern and partly polished natural steel finish.

F Heavy Duty Gripping Pliers. These popular and powerful general use pliers have 2-position slip joints to permit a wide gripping capacity and the jaws provide an end gripping section with sharp, matching, parallel teeth and a curved section with large deep cut teeth for pipe work etc. At the base of the jaws is a wire cutter of curved shape which overlap to prevent wire being forced out as cutting pressure is applied. Handles have raised "Vacuum Grip" pattern. Following five pliers are nickel and chrome plated.

No. 44 1 5/64" Jaw Thickness 4 1/2" long
No. 45 2 3/64" Jaw Thickness 5 9/16" long
No. 46 2 3/64" Jaw Thickness 6 7/16" long
No. 47 1 3/32" Jaw Thickness 7 1/2" long
No. 49 1 1/2" Jaw Thickness 9 1/4" long

Following pliers have same design as the above but have natural steel finish heads and handles partly polished. No pattern on handles.

No. 44C 1 5/64" Jaw Thickness 4 1/2" long
No. 45C 2 3/64" Jaw Thickness 5 9/16" long
No. 46C 2 3/64" Jaw Thickness 6 7/16" long
No. 47C 1 3/32" Jaw Thickness 7 1/2" long
No. 49C 1 1/2" Jaw Thickness 9 1/4" long

PL-70B Set. Consists of seven Pliers.
Nos. 9C, 50C, 47, 65, 87, 196 and 208A.

G No. 5, 4 1/2" Midget Plier. A useful little pair of pliers that can be used to excellent advantage on all extremely small work, radio, electrical, small bench jobs. Natural steel finish with polished head. Single position riveted joint. No handle pattern.

H No. 50C 5" Ignition Plier. Very narrow jaws designed to reach in and turn the thin nuts found in distributors, voltage regulators, etc. The slight angle of the head assists when working around obstructions. 2-position slip joint permits a 1 3/32" maximum parallel jaw opening. Natural steel finish with partly polished head and handles. No pattern on handles.

J No. 105 5" Ignition Plier. Midget Pliers with standard 3-position adjustable slip-joint. It's a dandy for servicing carburetor, ignition, radio, and other small jobs. Nickel and chrome plated. Smooth handles.

K 208A 7 3/4" Angle Nose Battery Plier. Short round nose jaws provide a powerful grip on the terminal nut and prevent damaging top of battery. Valuable for all general gripping purposes. Jaw length 9/16". The thin, tapered nose is offset at a 30° angle for working in awkward spaces. Natural steel finish with partial polish on head and handles. No pattern on handles. Single position riveted joint.

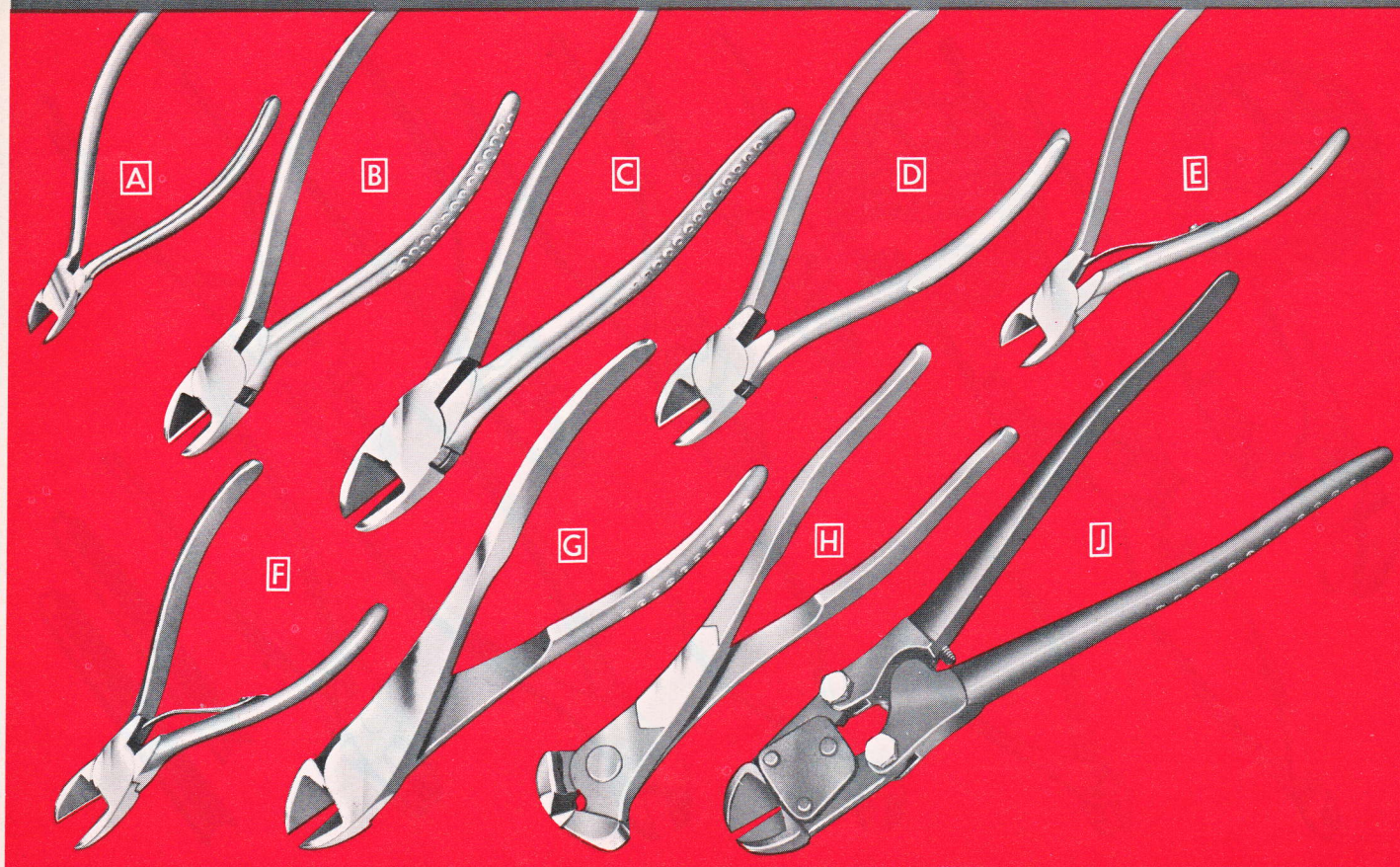
L Lineman Pliers. Powerfully built tools for gripping, twisting, hammering, and cutting. Engineered to give you narrow jaws for easy entry into tight spots yet tough and strong for hard work . . . localized jaw tempering adds wear and breakage resistance. Wire insulation breaker in handles. Cutter heads are machined to give perfectly matched blades and are induction hardened. Smoothly ground natural steel finish. No pattern on handles.

No. 57R 7" Lineman Plier.
No. HD-59 9 1/4" Lineman Plier.

M Insulating Handle Grips. Use any 7" or 8" plier safely on low voltage electrical equipment when fitted with these plastic insulating grips. Easily attached to any shape handle.

PG-7C Pair of Plastic Grips for 7" Pliers
PG-8C Pair of Plastic Grips for 8" Pliers

A WIDE RANGE OF *Snap-on* CUTTING PLIERS



SNAP-ON gripping and cutting pliers are precision made to give you the finest tools of their kind. Selected alloy tool steel provides the tough jaws and hard cutting edges professional use requires. The toughest, hardest cutting edges possible are produced by an electronic hardening process. This process heats and cools the metal so quickly that distortion of cutting edges is prevented, consequently, you get perfectly matched cutting blades in every SNAP-ON cutting plier. With proper care these SNAP-ON pliers will give years of satisfactory service. This service life can be extended through our factory repair service. Worn joints, rivets, or dulled cutting edges can be reconditioned to work like new. Costs much less than buying new tools.

DIAGONAL CUTTER PLIERS

A ★No. 184 4 1/4" Midget Diagonal Cutter. 1 3/8" jaw length. An excellent tool for all those tiny, tricky wire cutting jobs. It is small, but has abundant cutting power. Cutters are hand filed. Polished head and smooth handles.

B Standard Series Diagonal Cutters. Heads are polished and handles are natural buffed steel finish with raised "Vacuum Grip" pattern. You cannot buy a better cutter anywhere. Heads are induction hardened and cutting edges machined to a perfect match.

No. 85 4 7/8" Diagonal Cutter. 9/16" jaw length.

▲ No. 86 6" Diagonal Cutter. 3/4" jaw length.

▲ **C** No. 87 7 1/4" Heavy Duty Diagonal Cutter. 1 1/4" jaw. Our finest for those tough cutting jobs, cotter pin work, etc. Long full fashioned handles provide powerful cutting leverage. Long tapered heads and jaws match perfectly, are induction hardened. Head is smoothly polished, handles have raised pattern.

D Industrial Finish Diagonal Cutters. Designed with bow-type handles and no pattern on the handles. Natural steel finish with heads and handles partially polished.

No. 85C 4 7/8" Diagonal Cutter. 9/16" jaw length.

No. 86C 6 1/8" Diagonal Cutter. 3/4" jaw length.

No. 87C 7 1/4" Diagonal Cutter. 1 1/4" jaw length.

No. 87A 7 1/4" Diagonal Cutter. 1 1/4" jaw length. Same as the No. 87C, but is fully polished.

E No. 85S 4 7/8" Diagonal Cutter with removable handle spring. Jaw length 9/16".

LONG NOSE DIAGONAL CUTTERS

Have the same high quality features of our other cutters plus the advantage of a longer cutting nose. Specially useful where extra reach is needed. Powerful, accurate. Easy to use without hand fatigue. Have natural finish on handles and semi-polished heads.

F No. 85LS Long Nose Cutter with removable handle spring. Jaw length 3/4" overall length 5 1/16". Spring helps avoid operator hand fatigue.

No. 85L Long Nose Cutter without handle spring. Jaw length 3/4" overall length 5 1/16". A favorite with many users.

HIGH LEVERAGE DIAGONAL CUTTER

G No. 387 7 1/4" High Leverage Diagonal Cutter. 3/4" jaw length. Sturdy over-capacity jaws handle the toughest cutting jobs. Cutter jaws are hand edged after tool is assembled to insure absolute accuracy in overlapping shear action. Spring tempered handles afford tremendous cutting leverage and comfortable grip. Natural finish with polished head and stamped "Vacuum Grip" pattern on handles.

No. 387C 7 1/4" Diagonal Cutter. Same design as No. 387 above, but with partly polished head and handles. No handle pattern.

AVAILABLE TO LARGE QUANTITY BUYERS ON SPECIAL ORDER:

Plastic Handle Coating. Baked on plastic gives a comfortable hand grip.

Plastic Jaw Inserts. Baked on insert grips cut wire . . . helps prevent cut off pieces causing wiring shorts, etc.

END CUTTING PLIER

H No. 17 7 1/4" End Cutter. 1 5/16" jaw width. This improved type of end cutter places the cutting action as closely as possible to the joint rivet in order to give you the greatest possible cutting leverage. The head design lets you cut extremely close to an object or it can be used with a rolling motion to pull nails or other objects. Head is partially polished, handles have a sand blasted natural steel finish without any handle pattern.

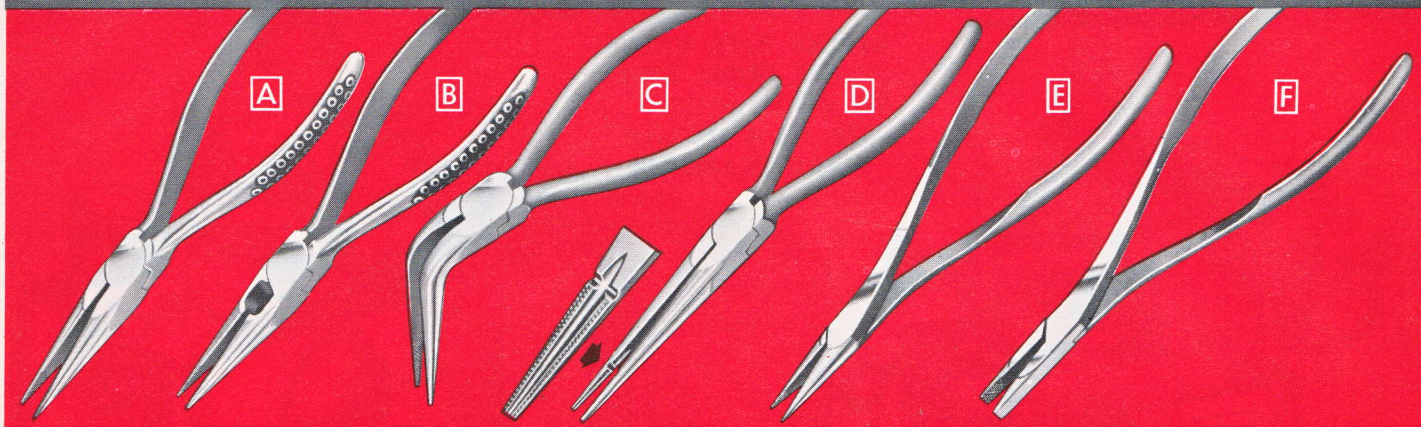
COMPOUND LEVERAGE CUTTER

J HL-9 Compound Leverage Diagonal Cutter. This excellent high leverage diagonal cutter is designed to provide tremendous power for easy cutting of large diameter wire and small bolts. It incorporates many outstanding features that makes it very popular for the mechanical and industrial field. It will cut bolts and wire up to 1/4" in diameter with comparative ease.

The cutter jaws are ground to give a highly efficient cutting angle and are replaceable when necessary. The maximum jaw opening is 3/8". A screw stop inside the cutter handle may be adjusted to keep jaws from touching each other when bolt is cut—this prevents dulling or nicking.

Full fashioned handles 7 1/4" long are comfortable with well rounded edges. The cutting jaws are bolted to the handles and the overall length of the tool is 9". The handles have a stamped "Vacuum Grip" cup pattern and the entire tool has a rust resistant black finish.

NEEDLE NOSE PLIERS TO FIT EVERY NEED



HIGH QUALITY NEEDLE NOSE PLIERS

These pliers are the same basic design and finish and are offered in a range of sizes. Needle nose pliers are designed to handle small objects, reach into restricted areas or coil or loop wire. Their use on objects that are too large will destroy jaw alignment. These tools have a natural steel finish with full polish and handles have the raised "Vacuum Grip" cup pattern.

- A** ★No. 94 4½" Needle Nose without cutter. Jaw length is 2⅞". For tiny jobs.
- A** No. 095 5-3/16" Needle Nose without cutter. 1⅞" jaw length. For small work.
- A** No. 95 6" Needle Nose without cutter, 1⅞" jaw length. A sturdy plier.
- A** No. 096 6¾" Needle Nose without cutter, 2⅞" jaw length. Good all purpose size.
- A** No. 96 7⅞" Needle Nose with side cutter. 2¼" jaw length. A heavy duty tool.
- B** No. 196 7⅞" Needle Nose with side cutter. 2¼" jaw length. A dual purpose tool preferred by many mechanics.
- A** No. 97 8" Needle Nose without cutter. 3¼" jaw length. A real work horse.

INDUSTRIAL FINISH NEEDLE NOSE

The pliers are the same size, design, and high quality as the No. 96 and No. 196 listed at left but they have smooth handles and are polished only on the nose surfaces and on part of the handles.

No. 96C 7⅞" Needle Nose without cutter. 2¼" jaw length. Built to give long service.

No. 196C 7⅞" Needle Nose with side cutter. 2¼" jaw length. A good dual purpose plier.

GOOD PLIER CARE—LONG WEAR

Don't destroy jaw alignment or ruin cutting edges by hammering with a plier. It is safer and cheaper to use a hammer.

Never use a plier to cut a "hot" wire, the resultant hole in cutter can't be removed. Use the right size gripper plier—if you can't grip the material and keep the plier jaws parallel, then the plier is too small.

Don't use a needle nose plier to grip objects of larger diameter than the point of one of the jaws.

Avoid using pliers to do a pipe wrench job. Rocking a diagonal cutter sideways to do a tough job may twist and break the jaws.

SPECIAL PURPOSE NEEDLE NOSE

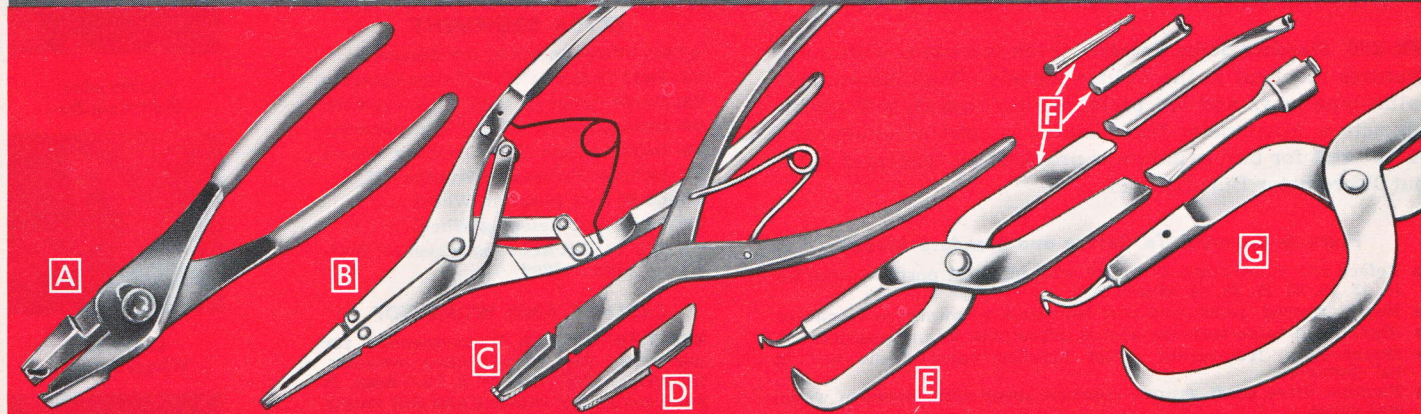
C No. 497 6⅝" Bent Needle Nose. 3⅞" jaws. The long tapered nose slips thru small openings to reach awkward jobs or around obstructions. Bent nose lets you see what you are doing. Natural steel finish on handles, semi-polished head.

D No. 597 7-15/16" Pin Gripping Plier. 3⅞" jaw length. Matched parallel and cross grooves in the jaw tips provide a sure grip for pulling stubborn pins. Long nose reaches into recesses. Semi-polished head and natural steel finish on handles.

E No. 60C 7¾" Short Needle Nose Plier. 1⅞" jaw length. The short jaws provide greater gripping strength at the top. Natural steel finish with semi-polished head.

F No. 60R 7¾" Duck Bill Plier. 1⅞" jaw length, ⅝" tip width. Preferred by aviation mechanics for pulling locknut safety wires. The long, flat jaws have a fine serrating on the inside of the tips which will grip without chewing up the wire ends. Useful for many gripping jobs. Natural steel finish on handles, semi-polished head.

SPECIAL PLIERS FOR SPECIFIC SERVICE JOBS



A No. HCP-48BP 8" Corbin Hose Clamp Plier. ⅞" jaw thickness. Two position slip-joint . . . handles ¾" to 2" diameter Corbin hose clamps. Jaw stops keep jaws ⅛" apart. Jaws have black finish, handles have hot-dipped baked-on plastic coating for comfortable grip.

No. HCP-46BP Small Corbin Hose Clamp Plier. Same as HCP-48BP above but only 6⅞" long for use on hose clamps on fuel lines, etc. as well as for outboard motors and hose connections smaller than ¾". Jaw stops keep jaws ⅛" apart.

B ★No. PJ-10 Lock Ring Plier with jaws that remain parallel from closed to maximum open position. Made for quick, easy and safe lock-ring removal and replacement. Can also be used on piston rings. Operates on lever principle which provides plenty of power to remove even the most difficult lock-ring. Very little handle pressure required. Spring between handles returns jaws to closed position. Maximum opening is 1⅞", minimum .150". Length 10⅞". Between handles, 3⅞".

C ★No. 70A 8⅞" Lock Washer Plier. ⅝" tip width. Saves time and trouble when removing the horseshoe lock washer on brake shoe anchor pin. Jaw tips bend at a right angle and are serrated and indented on the outside to prevent slipping. Spring holds the jaws closed. Sand blast natural steel finish.

No. 700A Large Lock Washer Plier. Same design as No. 70A above but 14" long. Handles lock washers on 4-speed transmissions on trucks, earthmovers, tractors, etc.

D ★No. 70B 8⅞" Lock Washer Plier. ⅝" tip width. Similar to above but with straight tips. Works in close places for easy removal of horseshoe lock washers. Sand blasted natural finish. Spring tension closes plier.

F No. 31B Brake Spring Plier. Simplifies removing and replacing brake springs. Inserted steel hook jaw is replaceable. Same head as No. 131A but handle ends are different and are used to replace springs on Bendix type brakes and Chrysler center-plane type. Tool has plated finish. 13¼" long.

E No. 131A Brake Spring Plier. A combination tool that can be used for the removal and replacement of Bendix, Lockheed and other hydraulic and mechanical brake springs. The steel hook on the jaw is replaceable if necessary. One handle has socket end for removing springs set over a post, the other has a guide for replacing springs. Overall length 13¼". Plated sand blasted finish.

★No. 31-3 Extra Hook. Fits No. 31B and No. 131A brake spring pliers.

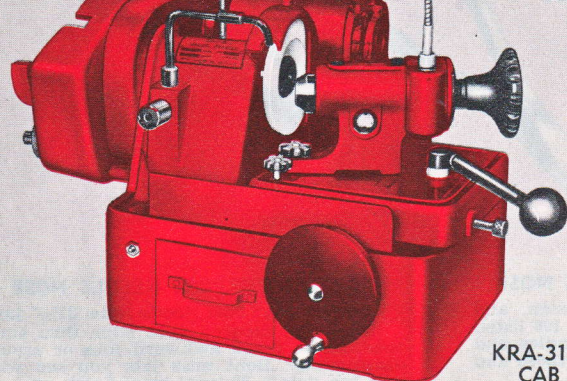
G No. 231 Truck Brake Spring Plier 20¼" long. This rugged tool has plenty of leverage and power for removing and replacing heavy brake shoe return springs on some models of Huck, Lockheed, Wagner, etc.

Special tempered spring hook is held in the jaw with a roll pin and is easily replaced if it becomes damaged. As the hook is subject to abuse it is not guaranteed. Plated sand blasted finish.

★No. 231-3 Replacement hook for above truck brake spring plier.

Snap-on® WET VALVE REFACERS

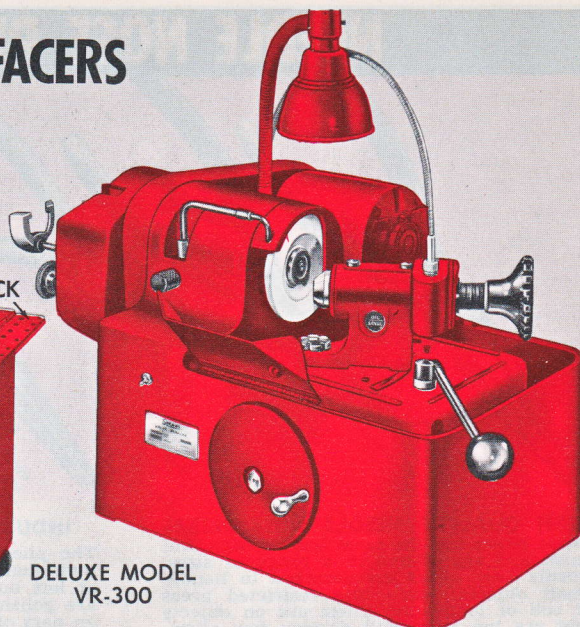
REFACE ANY VALVE
ANGLE FROM ZERO
TO 90 DEGREES ...
UP TO 4 INCHES
HEAD DIAMETER



KRA-315B
CAB



KRA-16
VALVE RACK



DELUXE MODEL
VR-300

RECONDITIONS VALVES, VALVE LIFTERS AND ROCKER ARMS FOR CARS, TRUCKS, TRACTORS AND AIRCRAFT, MARINE AND OTHER ENGINES

DELUXE AND STANDARD MODELS AVAILABLE

VR-300 Deluxe Series Refacers. Important features are designed into these machines to make them easier to use and service and to keep them efficient and accurate over a longer time period. The base is larger and heavier than the standard models and all working parts such as worktable ways, wheel spindle and feed screw are pre-loaded and never require adjustment for wear. Coolant tank is drawer type for easy removal, worktable and ways are heavier construction and sit within the housing wall to prevent loss of coolant. Micrometer Butt Grinder is included as standard equipment.

VR-200 Standard Series Refacers. Fine machines with many features identical to the Deluxe models. Work tables have lathe-type ways and are preloaded for smooth self adjusting action. Micrometer Butt Grinder is optional equipment. A "V" rest for butt grinding is provided on machines without Micrometer Butt Grinder.

Features Common To Deluxe and Standard Models

- Reface any valve angle 0° to 90° with quickset positive stops for 14, 15, 19, 20, 29, 30, 44, 45 and 90°.
- Heavy, rugged, reinforced cast iron base to minimize vibration.
- Right-hand table-traverse arm is adjustable to any position.
- Double-grip, true-center collet handles valve stems $\frac{3}{32}$ " to $\frac{1}{16}$ " diameter.
- Flexible drive shaft assures constant speed ratio between wheel and valve.
- Baffled coolant tank delivers clean fluid to large capacity vane-type pump. Tank is removable drawer type.
- Tapered rocker arm attachment bushings are included to fit all sizes of rocker arms.
- Oil and grease fittings are out in the open.
- Quick-set valve stop requires only one setting to complete all valves in a series.
- Adjustable stop protects valve stem and spindle from contact against the grinding wheel.

STANDARD EQUIPMENT

Double end collet $\frac{3}{32}$ " to $\frac{1}{16}$ " valve stem diameter.
Diamond Stone Dresser
Rocker Arm Attachment
*Micrometer Butt Grinder with Valve Tappet holder, valve depth gauge and 46 Grit wheel.
† "V" Rest for Butt Grinding
Pint can of Soluble Oil
Complete Lamp Assembly
80 Grit Refacing Wheel
*On VR-300 and VR-200BM Series
†On VR-200B Series only

EXTRA EQUIPMENT

★VRC-1 Vinylite Cover for Refacers
VR-2W33 Collet $\frac{3}{32}$ " to $\frac{1}{16}$ " stem capacity
VR-2W-34 Collet $\frac{1}{4}$ " to $\frac{3}{8}$ " stem capacity
VR-2W35 Collet $\frac{1}{2}$ " to $\frac{1}{16}$ " stem capacity
VR-2M89 46 Grit Butt Grinding Wheel
VR-2M110A Pint can of Soluble Oil
VW-60 60 Grit Refacing Wheel
VW-80 80 Grit Refacing Wheel
VW-80S 80 Grit Refacing Wheel for Stellite valves

CABINET AND WORK TOP

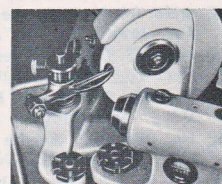
KRA-315B Roll Cab Recommended for use with the above valve refacers. Drawer is 18 $\frac{1}{4}$ " x 21 $\frac{1}{8}$ " x 4 $\frac{1}{4}$ " deep. It has heavy duty runners and full length handpull. Doors have pockets for instruction manuals, etc. Locking the doors also lock the drawer. Top is 19" x 26 $\frac{1}{2}$ " and has a raised lip on sides and back. Compartment has one shelf. Height of cab is 34 $\frac{3}{4}$ ". All wheels swivel. Valve rack is not included with roll cab.

KRA-16 Valve Rack. Hooks over raised lip of cab top and holds sixteen valves

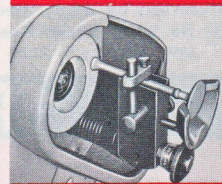
MODELS AVAILABLE—ORDER BY STOCK NUMBER SHOWN BELOW

MODELS AVAILABLE	Motor $\frac{1}{3}$ H.P. 115 V 1 Ph. 60 Cy. AC	Motor $\frac{1}{3}$ H.P. 230 V 1 Ph. 60 Cy. AC	Motor $\frac{1}{3}$ H.P. 230 V 1 Ph. 50 Cy. AC	Motor $\frac{1}{3}$ H.P. 115 V 1 Ph. 50 Cy. AC
DELUXE SERIES—With Standard Equipment	VR-300	VR-301	VR-304	VR-305
STANDARD SERIES—With Standard Equipment				
Without Micrometer Butt Grinding Attachment	VR-200B	VR-201B	VR-204B	VR-205B
With Micrometer Butt Grinding Attachment	VR-200BM	VR-201BM	VR-204BM	VR-205BM

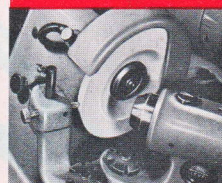
Models with special voltage motors are available on special order. Prices upon request.



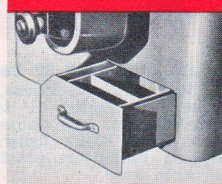
Rocker Arm
Attachment



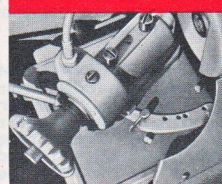
Micrometer
Butt Grinder



Diamond
Wheel Dresser



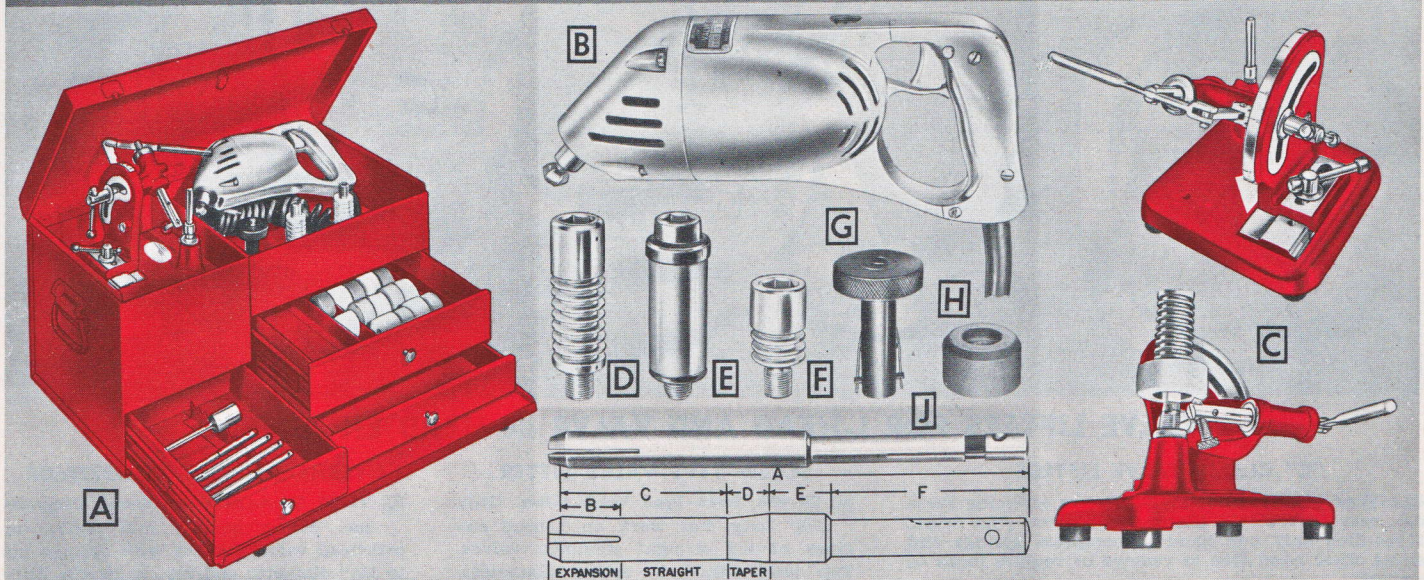
Removable
Coolant Tank



Positive Stop
Angle Settings

Blue-Point VALVE SEAT GRINDER SET

RESURFACES HARD OR SOFT VALVE SEATS . . . ACCURATELY—SPEEDILY



Blue-Point VALVE SEAT GRINDER SET

A VG-124A-B Valve Grinder Set. Gives you all the units you need to do a perfect job on all cars and light trucks (except some foreign-makes). The special metal case has non-spill drawers with plenty of room for additional wheels and pilots. This rugged box has trunk-type handles, piano-type hinges, tumbler lock, and red enamel finish. Two wheel carriers are included to eliminate time consuming interchange of roughing and finishing stones. Individual units are described on this page. For valve seat reconditioning at its finest here is the set you need.

VG-124A Grinder Set. Above set without the case.

VG-124A-B SET CONTAINS

VG-14 Grinder
VG-25B Dresser
★VG-10-2D Carrier
(2 included)
VX-1 Pilot Wrench
KRA-100 Metal Case

PILOTS

★VX-10— $\frac{5}{16}$ "
★VX-11L— $\frac{11}{32}$ "
★VX-12— $\frac{3}{8}$ "
★VX-397—.397"
★VX-33— $\frac{11}{32}$ "

VALVE GRINDING WHEELS

Rough	Diam.	Fine
★SE-445R	$\frac{13}{16}$ "	★SE-445F
★SE-485R	$\frac{1}{2}$ "	★SE-485F
★SE-525R	$\frac{15}{16}$ "	★SE-525F
★SE-565R	$\frac{13}{16}$ "	★SE-565F
★SE-605R	$\frac{17}{16}$ "	★SE-605F
★SE-645R	2"	★SE-645F
★SE-685R	$\frac{21}{16}$ "	★SE-685F

Blue-Point SEAT GRINDERS

B VG-14 Heavy Duty Valve Seat Grinder. Angle drive is placed at the popular 45° angle to permit fast easy work in confined space. Powerful 115 volt, 60 cycle AC/DC, motor has a free running speed of 10,000 R.P.M. Recommended for use with wheels up to $\frac{31}{32}$ " diameter. The grinder has ball bearings on all shafts . . . a double pole switch with locking pin . . . an efficient air blower fan and seven feet of cord with 3-way plug and grounding adaptor.

Note: Grinding wheels for above are listed on page 75.

Blue-Point WHEEL DRESSER

C VG-25B Diamond Wheel Dresser. Dresses any angle on all types and sizes of valve seat wheels up to $\frac{61}{32}$ " diameter.

★VG-25-6 Replacement Diamond Screw

All moving parts, handle joints, etc., are machined to give smooth, wobble-free operation.

Screw plunger is carried by a sliding housing on a three-hole positioning plate. Adjustment is quickly made to the required wheel diameter.

Angle setting index is quickly positioned on the large, easily read gauge.

Leather seals keep grit out of plunger guide hole.

Hardened plunger has a machined keyway to hold diamond in true alignment and diamond has over a half inch screw adjustment.

Lock nut locks threaded pilot at the correct wheel height.

Heavy cast iron base has rubber feet and holes for permanent mounting.

Blue-Point WHEEL CARRIERS

D ★VG-10-2D Wheel Carrier. Spring mounting permits vertical vibrating action which prevents undue wheel pressure and allows centrifugal force to throw out grindings. Cooling fins dissipate heat. $\frac{43}{8}$ " long. $\frac{5}{8}$ "-18 threads.

E VG-15 Ball Bearing Wheel Carrier. Inner sleeve engages the pilot groove to prevent turning and the wheel carrying outer sleeve rides and rotates on sealed ball bearings around the inner sleeve. Recommended for heavy duty or very frequent use. $\frac{43}{8}$ " long. Has $\frac{5}{8}$ "-18 threads.

F ★VG-10-2SA Short Wheel Carrier. Needed on some cars where valve seats are close under the fire wall. $\frac{21}{2}$ " long, $\frac{5}{8}$ "-18 thread.

J METRIC VALVE GUIDE PILOTS

Needed for use on the more popular makes of foreign cars. These pilots lock securely and center correctly—each segment acts independently, compensating for wear in its own portion of the guide hole.

Stock No.	Guide Size in mm.	Dimensions in Inches					
		A	B	C	D	E	F
VX-236	6	$\frac{45}{8}$	$\frac{3}{4}$	$\frac{13}{8}$	$\frac{7}{8}$	—	$\frac{23}{8}$
VX-255	$\frac{61}{2}$	$\frac{45}{8}$	$\frac{7}{8}$	$\frac{13}{8}$	$\frac{7}{8}$	—	$\frac{23}{8}$
VX-275	7	$\frac{45}{8}$	$\frac{7}{8}$	$\frac{13}{8}$	$\frac{7}{8}$	—	$\frac{23}{8}$
VX-295	$7\frac{1}{2}$	$\frac{51}{4}$	$\frac{7}{8}$	$\frac{13}{4}$	$\frac{3}{4}$	—	$\frac{23}{4}$
VX-315	8	$\frac{51}{4}$	$\frac{7}{8}$	$\frac{13}{4}$	$\frac{3}{4}$	—	$\frac{23}{4}$
VX-334	$8\frac{1}{2}$	$\frac{51}{4}$	$\frac{7}{8}$	$\frac{13}{4}$	$\frac{3}{4}$	—	$\frac{23}{4}$
VX-354	9	$\frac{51}{4}$	$\frac{7}{8}$	$\frac{13}{4}$	$\frac{3}{4}$	—	$\frac{23}{4}$
VX-374	$9\frac{1}{2}$	6	$\frac{7}{8}$	$\frac{21}{4}$	$\frac{3}{4}$	—	3
VX-393	10	6	$\frac{7}{8}$	$\frac{21}{4}$	$\frac{3}{4}$	—	3
VX-820							Pilot for Ford Prefect

J Blue-Point PILOTS

These pilots lock securely and center correctly, because each segment acts independently, compensating for wear in its own portion of the guide hole — accommodates guides worn up to .008". Clean valve guide hole before inserting.

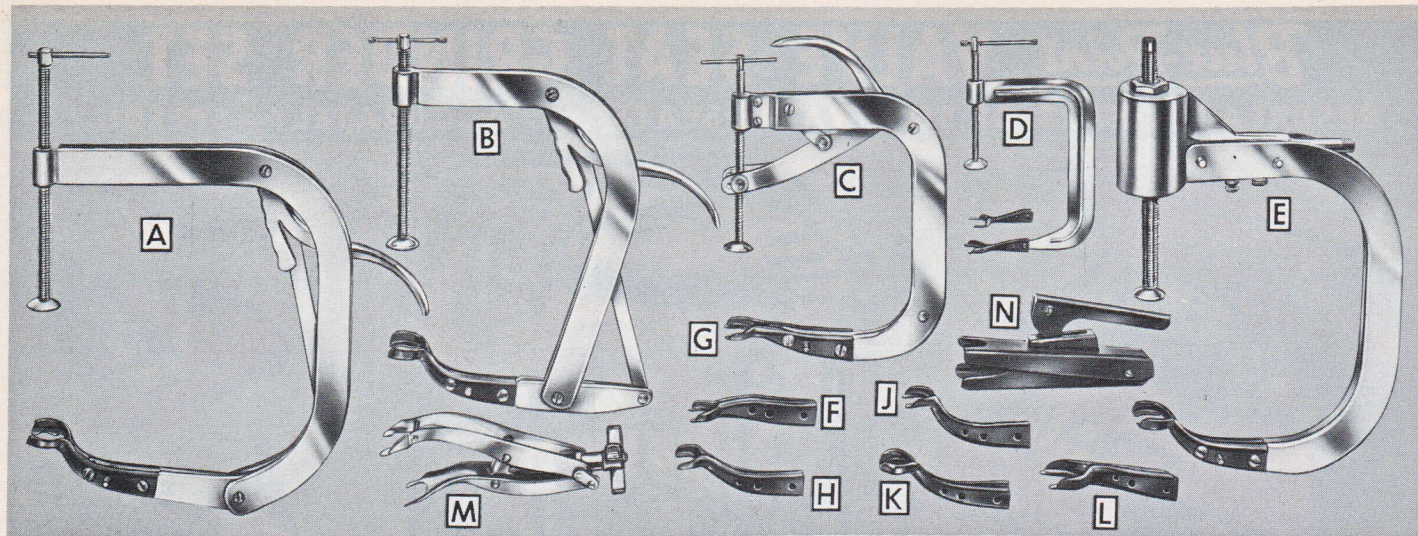
Stock No.	Guide Size	Dimensions in Inches					
		A	B	C	D	E	F
★VX-8	$\frac{1}{4}$ "	$\frac{45}{8}$	$\frac{3}{4}$	$\frac{13}{8}$	$\frac{7}{8}$	—	$\frac{23}{8}$
★VX-8S	$\frac{1}{4}$ "	$\frac{33}{4}$	$\frac{3}{4}$	1	$\frac{7}{8}$	—	2
★VX-9	$\frac{9}{32}$ "	$\frac{45}{8}$	$\frac{7}{8}$	$\frac{13}{8}$	$\frac{7}{8}$	—	$\frac{23}{8}$
★VX-9S	$\frac{9}{32}$ "	$\frac{33}{4}$	$\frac{3}{4}$	1	$\frac{7}{8}$	—	2
★VX-10	$\frac{5}{16}$ "	$\frac{51}{4}$	$\frac{7}{8}$	$\frac{13}{4}$	$\frac{3}{4}$	—	$\frac{23}{4}$
★VX-10S	$\frac{5}{16}$ "	$\frac{49}{16}$	$\frac{15}{16}$	$\frac{15}{16}$	$\frac{7}{8}$	—	$\frac{23}{8}$
★VX-10L	$\frac{5}{16}$ "	$\frac{61}{4}$	$\frac{7}{8}$	$\frac{13}{4}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{31}{4}$
★VX-11	$\frac{11}{32}$ "	$\frac{51}{4}$	$\frac{7}{8}$	$\frac{13}{4}$	$\frac{3}{4}$	—	$\frac{23}{4}$
★VX-11S	$\frac{11}{32}$ "	$\frac{41}{2}$	$\frac{7}{8}$	$\frac{11}{4}$	$\frac{7}{8}$	—	$\frac{23}{8}$
★VX-11L	$\frac{11}{32}$ "	$\frac{61}{4}$	$\frac{7}{8}$	$\frac{13}{4}$	$\frac{3}{4}$	$\frac{1}{2}$	$\frac{31}{4}$
★VX-12	$\frac{3}{8}$ "	6	$\frac{7}{8}$	$\frac{21}{4}$	$\frac{3}{4}$	—	3
★VX-12S	$\frac{3}{8}$ "	$\frac{41}{2}$	$\frac{7}{8}$	$\frac{11}{4}$	$\frac{7}{8}$	—	$\frac{23}{8}$
★VX-12L	$\frac{3}{8}$ "	$\frac{71}{4}$	$\frac{7}{8}$	$\frac{21}{4}$	$\frac{3}{4}$	1	$\frac{31}{4}$
★VX-397	.397"	$\frac{51}{8}$	$\frac{7}{8}$	2	$\frac{5}{8}$	—	$\frac{21}{2}$
★VX-13	$\frac{13}{32}$ "	6	$\frac{7}{8}$	$\frac{21}{4}$	$\frac{3}{4}$	—	3
★VX-13L	$\frac{13}{32}$ "	$\frac{71}{4}$	$\frac{7}{8}$	$\frac{21}{4}$	$\frac{3}{4}$	1	$\frac{31}{4}$
★VX-14	$\frac{7}{16}$ "	$\frac{61}{4}$	1	$\frac{21}{2}$	$\frac{3}{4}$	—	3
★VX-14M	$\frac{7}{16}$ "	$\frac{71}{2}$	1	$\frac{21}{2}$	$\frac{3}{4}$	1	$\frac{31}{4}$
★VX-14L	$\frac{7}{16}$ "	$\frac{81}{2}$	1	$\frac{21}{2}$	$\frac{17}{16}$	$\frac{15}{16}$	$\frac{31}{4}$
★VX-14S	$\frac{7}{16}$ "	$\frac{51}{4}$	$\frac{7}{8}$	$\frac{13}{8}$	$\frac{7}{8}$	—	3
★VX-16	$\frac{1}{2}$ "	$\frac{61}{4}$	1	$\frac{21}{2}$	$\frac{3}{4}$	—	3
★VX-16L	$\frac{1}{2}$ "	8	1	$\frac{21}{2}$	$\frac{17}{16}$	$\frac{15}{16}$	$\frac{31}{4}$
★VX-16M	$\frac{1}{2}$ "	$\frac{71}{4}$	1	$\frac{21}{2}$	$\frac{15}{16}$	—	$\frac{31}{16}$
★VX-17	$\frac{17}{32}$ "	$\frac{61}{4}$	$\frac{11}{8}$	$\frac{21}{2}$	$\frac{3}{4}$	—	$\frac{31}{2}$
★VX-18	$\frac{9}{16}$ "	$\frac{61}{4}$	$\frac{11}{8}$	$\frac{21}{2}$	$\frac{3}{4}$	—	3
★VX-18L	$\frac{9}{16}$ "	8	$\frac{11}{8}$	$\frac{21}{2}$	$\frac{17}{16}$	$\frac{15}{16}$	$\frac{31}{4}$
★VX-19	$\frac{19}{32}$ "	$\frac{51}{4}$	$\frac{11}{8}$	1	$\frac{17}{2}$	$\frac{3}{4}$	3
★VX-20	$\frac{5}{8}$ "	$\frac{61}{4}$	$\frac{11}{8}$	$\frac{21}{2}$	$\frac{3}{4}$	—	3
★VX-22	$\frac{11}{16}$ "	$\frac{61}{4}$	$\frac{11}{8}$	$\frac{21}{2}$	$\frac{3}{4}$	—	3
★VX-22L	$\frac{11}{16}$ "	$\frac{83}{8}$	$\frac{11}{8}$	$\frac{21}{2}$	$\frac{13}{8}$	1	$\frac{31}{8}$
★VX-24	$\frac{3}{4}$ "	$\frac{63}{4}$	$\frac{11}{8}$	$\frac{21}{2}$	1	—	$\frac{31}{4}$
★VX-33	$\frac{11}{32}$ "	$\frac{43}{4}$	$\frac{13}{16}$	$\frac{3}{4}$	$\frac{1}{2}$	—	$\frac{35}{16}$

G VX-1 Pilot Wrench. A convenient tool for inserting and removing valve guide pilots. Two spring loaded plugs lock into pilot hole. Push button releases the lock.

H Small Valve Wheels. For small engines, some Continental Motors, air compressor engines, etc. Universal grit for roughing and finishing. Dress to required angle before using.

★UVS-32 Wheel.....1" diameter x $\frac{1}{4}$ " thick

★UVS-36 Wheel..... $\frac{11}{16}$ " diameter x $\frac{1}{4}$ " thick



VALVE LIFTERS FOR L-HEAD AND VALVE IN HEAD ENGINES

"C" CLAMP VALVE LIFTERS

No matter what engine valves you are servicing these fast, easy to use "C" Clamps will speed your work. It requires only one hand to compress springs and leaves other hand free to remove or replace locks or keepers.

Helps prevent pinched, smashed or bruised fingers. No more calling a second man away from another job to hold keepers in place while spring is being released. Powerful leverage with cam locking handles that are self-locking without extra slides or rings. Screw adjusting post is threaded full length for maximum capacity. The threaded shaft adapts to various valve stem lengths and the shaft foot has spring loaded centering point to grip the valve head tightly. Quality made of tempered spring steel, lifetime plated. Jaws not plated.

A CF-11E Universal Type. For $\frac{7}{8}$ " through $2\frac{1}{2}$ " spring diameters. Height $10\frac{1}{2}$ ", width $9\frac{1}{2}$ ". For use on cars, truck, tractor, bus and marine L-Head and Valve in head engines. Three pairs of jaws supplied, CF-21P, CF-22CP, and CF-23P.

A CF-1E Large Capacity Universal Type. For $\frac{7}{8}$ " through $2\frac{1}{2}$ " spring diameter, without removing manifold. Height $10\frac{1}{2}$ ", width 12". Supplied with CF-21P, CF-22CP, and CF-23P jaws.

B CF-17A For High Compression Engines. For 1" to 2" spring diameters on V-8 car and truck engines with overhead valving. Height $9\frac{3}{4}$ ", width 7". Supplied with CF-22CP medium offset, general purpose jaws.

C CF-18 For Compacts, Foreign Cars, Small Engines. For $\frac{7}{8}$ " to $1\frac{1}{2}$ " diameter springs. Does L-head work without removing head. Height $6\frac{1}{2}$ ", width $6\frac{1}{4}$ ". Supplied with CF-21AP general purpose jaws.

D CF-19 For Small Air-Cooled Engines. For $\frac{3}{4}$ " to $1\frac{1}{16}$ " spring diameters. Height $5\frac{1}{8}$ ", width $3\frac{3}{8}$ ". Supplied with CF-19-4 and CF-19-3A jaws. Services virtually all small motors, motorcycles, garden tractors, etc.

E CF-700 AIR-OPERATED MODEL. For 1" to $2\frac{1}{2}$ " diameter springs. Height 10", width 8". Supplied with CF-21P, CF-22CP, and CF-23P Jaws. Gives you complete control for all spring work on late model cars, trucks, busses, tractors, marine and industrial type engines.

This easily handled, light weight (less than 6 lbs.) unit features a completely parallel lift which positively will not bend the valve stem. It operates on line pressures of 90 to 150 pounds and develops pressures equal to three times the line pressure.

Here is the easiest, fastest method of handling heavy valve spring work with a light, efficient, easily handled lifter controlled by two simple air valves.

EXTRA JAWS FOR ABOVE LIFTERS

Will fit all above models except CF-19

F CF-21P Straight. Cap: $\frac{7}{8}$ " to $1\frac{1}{8}$ ".

G CF-21AP Low Offset. Cap: $\frac{7}{8}$ " to $1\frac{1}{2}$ ".

H CF-22AP Low Offset. Cap: 1" to 2".

J CF-22BP High Offset Cap: 1" to 2".

K CF-22CP Medium Offset. Cap: 1" to 2".

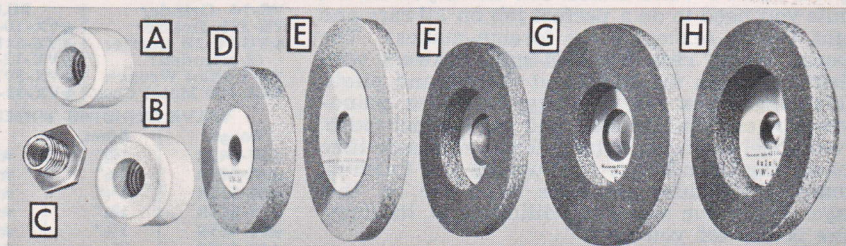
L CF-23P Large Straight. Cap: $1\frac{1}{2}$ " to $2\frac{1}{2}$ ".

SCREW-TYPE VALVE LIFTER

M CF-49A Screw-Type Valve Lifter. Only $9\frac{1}{4}$ " long. For work on L-head engines having straight stemmed valves. Top jaws adjust to spring diameters. Easy-to-turn screw provides fast, easy lift up to $2\frac{3}{8}$ " capacity. Jaws remain parallel, lock at any point and permit access to the valve stem keys.

OVERHEAD SPRING COMPRESSOR

N VL-30 Overhead Valve Spring Compressor. Works quickly and easily on overhead valve engines with springs up to $1\frac{3}{8}$ " diameter and $2\frac{1}{4}$ " in length. Single action lever compresses the spring and locks in place leaving both hands free. A sliding wedge adjusts to three positions to vary the jaw capacity.



VALVE SEAT WHEELS for SNAP-ON VG-14 Grinder

These SNAP-ON valve seat wheels are one third thicker than ordinary wheels and give almost double the length of service. Bushing extends part way through and does not interfere with dressing the wheel. All wheels are cut to 45° angle... are easily dressed to 30° without waste. All have $\frac{9}{16}$ "-18 threaded bushings.

Wheel Diameter	Wheel Depth	For Hard Steel and Stellite	For Finish Work
$1\frac{1}{4}$ "	1"	★SE-405R	★SE-405F
$1\frac{3}{8}$ "	1"	★SE-445R	★SE-445F
$1\frac{1}{2}$ "	1"	★SE-485R	★SE-485F
$1\frac{5}{8}$ "	1"	★SE-525R	★SE-525F
$1\frac{3}{4}$ "	1"	★SE-565R	★SE-565F
$1\frac{3}{4}$ "	1"	†★SEH-565R	—
$1\frac{7}{8}$ "	1"	★SE-605R	★SE-605F
2"	1"	★SE-645R	★SE-645F
$2\frac{1}{8}$ "	1"	★SE-685R	★SE-685F
$2\frac{1}{8}$ "	1"	†★SEH-685R	—
$2\frac{1}{4}$ "	$\frac{3}{4}$ "	★SE-725R	★SE-725F
$2\frac{3}{8}$ "	$\frac{3}{4}$ "	★SE-765R	★SE-765F
$2\frac{1}{2}$ "	$\frac{3}{4}$ "	★SE-805R	★SE-805F
$2\frac{1}{2}$ "	$\frac{3}{4}$ "	†★SEH-805R	—
$2\frac{5}{8}$ "	$\frac{3}{4}$ "	★SE-845R	★SE-845F
$2\frac{3}{4}$ "	$\frac{3}{4}$ "	★SE-885R	★SE-885F
$2\frac{7}{8}$ "	$\frac{3}{4}$ "	★SE-925R	★SE-925F
3"	$\frac{3}{4}$ "	★SE-965R	★SE-965F
$3\frac{1}{8}$ "	$\frac{3}{4}$ "	★SE-1005R	★SE-1005F

†Note: The sizes in both tables so marked are harder than the rest of the line and are primarily for tractor and truck engines using L. P. gas, or for seats crystallized and hardened from extreme heat.

VALVE SEAT WHEELS

B Universal type, used for cast iron, steel or stellite seats. Have $\frac{1}{16}$ "-16 threaded bushing, fits Keystone, Quickway, Skil-Saw, Sioux, Thor and U. S. Electric.

Stock No.	Dia.	Depth	Stock No.	Dia.	Depth
★VW-320	1"	$1\frac{1}{4}$ "	†★VWH-680	$2\frac{1}{8}$ "	1"
★VW-360	$1\frac{1}{8}$ "	$1\frac{1}{4}$ "	★VW-720	$2\frac{3}{4}$ "	$\frac{3}{4}$ "
★VW-400	$1\frac{1}{4}$ "	1"	★VW-760	$2\frac{3}{8}$ "	$\frac{3}{4}$ "
★VW-440	$1\frac{3}{8}$ "	1"	★VW-800	$2\frac{1}{2}$ "	$\frac{3}{4}$ "
★VW-480	$1\frac{1}{2}$ "	1"	†★VWH-800	$2\frac{1}{2}$ "	$\frac{3}{4}$ "
★VW-520	$1\frac{5}{8}$ "	1"	★VW-840	$2\frac{5}{8}$ "	$\frac{3}{4}$ "
★VW-560	$1\frac{3}{4}$ "	1"	★VW-880	$2\frac{3}{4}$ "	$\frac{3}{4}$ "
†★VWH-560	$1\frac{3}{4}$ "	1"	★VW-920	$2\frac{7}{8}$ "	$\frac{3}{4}$ "
★VW-600	$1\frac{7}{8}$ "	1"	★VW-960	$3\frac{1}{4}$ "	$\frac{3}{4}$ "
★VW-640	2"	1"	★VW-1000	$3\frac{1}{8}$ "	$\frac{3}{4}$ "
★VW-680	$2\frac{1}{8}$ "	1"			

★Have $9/16$ " threaded bushing.

†See footnote bottom of next column.

C VG-10-5A Bushing Adaptor, threads into above valve seat wheels to provide $9/16$ "-16 threaded opening for use with Black & Decker, K. O. Lee and Van Dorn.

VALVE REFACING WHEELS

Designed to fit popular types of valve refacing machines.

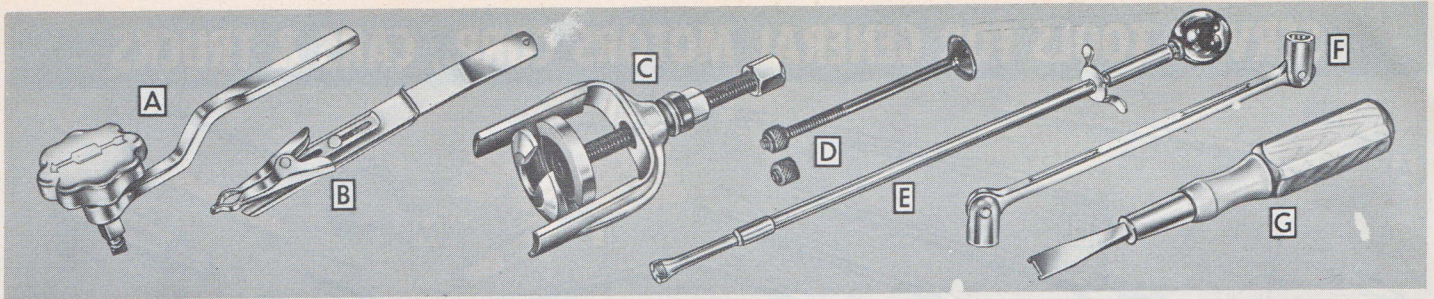
D ★VW-50 Straight Wheel, 3" x $\frac{1}{2}$ " x $\frac{1}{2}$ ". Fits Black & Decker Types $\frac{1}{2}$ " A to EF.

E ★VW-51 Straight Wheel, 4" x $\frac{3}{8}$ " x $\frac{5}{8}$ ". Fits Van Norman model A, B, D, G; Millers Falls 1412 and Kent-Moore U-905.

F ★VW-52 Offset Wheel, $3\frac{1}{2}$ " x $\frac{3}{4}$ " x $\frac{7}{8}$ ". Fits Kwik-Way Refacers.

G ★VW-53 Offset Wheel, 4" x $\frac{3}{4}$ " x $\frac{7}{8}$ ". Fits Kwik-Way Refacers.

H ★VW-54 Offset Wheel, 4" x 1" x $\frac{5}{8}$ ". Fits Black & Decker Super Service. Van Dorn $\frac{9}{16}$ " x $\frac{5}{8}$ ", Sioux 620 under serial 15,000. Sioux 650 over serial 30,000 and Sioux 660 over serial 10,000.



MISCELLANEOUS VALVE SERVICE TOOLS

A V-22 Overhead Valve Adjusting Tool. Handles all the adjusting work done by earlier models of this popular tool and also services 1954-56 Ford V-8 and Mercury; 1952-54 Lincoln, 1952-54 Ford "6" and 1952-56 F-7, F-8, and cab-over-engine trucks and Chevrolet "6" through 1962. The offset handle provides clearance over the hot manifold and makes tappet adjusting work on these engines fast, safe, and easy. Attach the right size socket to the square drive and, with the engine idling, place the socket onto the lock nut. Loosen or tighten the nut by means of the offset handle—push the knob handle down to engage the screw driver blade in the tappet screw slot for adjustment. The tool is designed to hold our $\frac{1}{2}$ " square drive sockets. Overall length of tool is $7\frac{1}{2}$ ".

B CF-7B Valve Key Replacer. The narrowest, most compact tool ever perfected for replacing all split type valve keys easily and quickly. It requires a very minimum of work space. The sliding base absolutely prevents the keys from dropping into the motor while being replaced... Easy to load... Easy to use—you'll do the job much faster.

C CJ-95 Valve Puller. This versatile tool pulls either Ford valve assemblies or stuck valves on all cars with head diameters up to $1\frac{3}{4}$ ", on most cars or trucks regardless of valve angle. A ball-joint arrangement allows the pressure screw to swivel in the yoke and automatically center itself over the valve. This means direct pulling action with no binding of parts at any time.

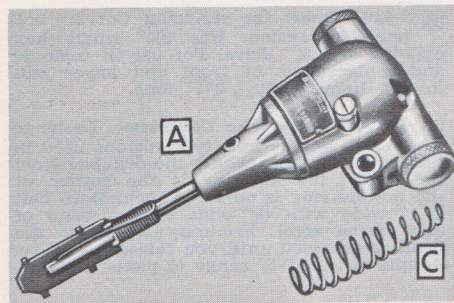
For easier operation, the thrust nut rides on a ball bearing. A $\frac{7}{16}$ " Ratcheting Boxsocket is recommended for turning the thrust nut and a $\frac{3}{4}$ " wrench is required to hold the pressure screw. The pulling head has tapered jaws to aid in sliding them under the head of the valve. This unit is used in conjunction with the CJ-95-8A (listed below) for pulling valve guides.

D CJ-95-8A Valve Guide Puller Shank. Used with CJ-95 (listed above) to remove valve guides. The $\frac{7}{16}$ " diameter shank fits through the guide and the proper size nut applied below the guide. Two knurled nuts are supplied... the CJ-95-8-2A Nut, for $\frac{5}{16}$ ", $11\frac{1}{32}$ ", and $\frac{3}{8}$ " guides and the CJ-95-8-5 Nut, for $\frac{7}{16}$ " and $\frac{1}{2}$ " guides.

E S-8690 Hydraulic Tappet Tool. Removes hydraulic tappets when varnish or other deposits prevent removal with a magnet. Pressure on the knob expands the gripping collet at the other end of the tool in the tappet. A pulling, twisting motion removes the tappet easily and quickly without undue force being applied to the tool. Finger grips on the shaft make it easy to keep the pressure applied. Tool is $14\frac{1}{4}$ " long.

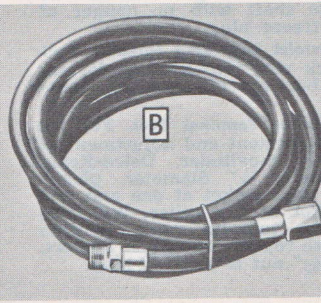
F S-8693 Tappet Adjusting Wrench. Designed specifically for adjusting overhead valves on Ford and Chrysler products. The $\frac{7}{16}$ " and $\frac{1}{2}$ " double hex flexheads are loosely fitted so that they "ride" with the tappet. Extra thick socket walls are specially heat treated to resist wear from the hardened, self locking adjusting screws. The 8" handle provides ample leverage and keeps hands clear of hot manifolds.

G GA-85 Tappet Screw Driver, used for overhead valve engines. Wide slotted blade, solidly anchored in large-grip wood handle for positive action. 9" long, blade $2\frac{1}{2}$ ", wide enough to fit over tappets, will not slip off.



AIR VALVE LAPPER

A VL-90 Heavy Duty Valve Lapper. A heavy duty air operated valve lapper that both oscillates and rotates the valve as it is being lapped into its seat. Assures perfect mating of the parts with no high or low spots. Sturdy cast aluminum case—designed to fit in the palm of the hand. Handy "trigger switch" is adjustable to regulate the speed of operation. Hardened shaft has needle bearings and a thrust bearing for smooth operation. Piston rides in a replaceable brass sleeve. Driving bit, bit spring and valve lift spring are included. Operates on 85-125 pounds air pressure.



LAPPER HOSE AND SPRING

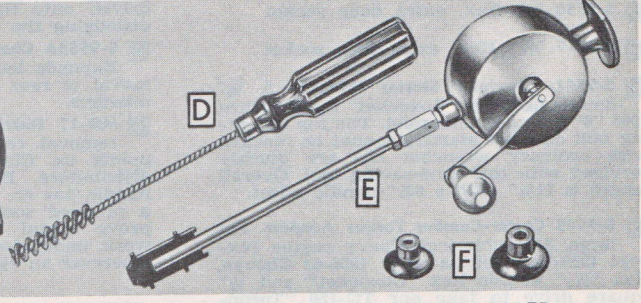
B VL 51A Hose. Eight feet of rubber hose with $\frac{1}{4}$ " pipe tap fittings. Fits VL-90 Valve Lapper.

C ESD-76 Valve Lift Spring. Use under valve when using valve lappers.

VALVE GUIDE BRUSHES

D These are extremely well made brushes of spiral design. Highest quality wire is securely woven into the twisted wire shank. Fluted wood handle provides a firm grip for your hand.

No.	Size
★AC-10	$\frac{5}{16}$ "
★AC-11	$11\frac{1}{32}$ "
★AC-12	$\frac{3}{8}$ "
★AC-14	$\frac{7}{16}$ "



HAND VALVE LAPPER

E VG-2A Valve Lapper. Heavy, machined, cast-iron housing for rugged use, all gears heat treated to resist wear, shaft has ball bearing thrust. Blade oscillates rapidly and advances one sixth of a revolution with each turn of the crank. Tool includes one universal driving bit.

RUBBER SUCTION CUPS

F Hold non-slotted valves properly for lapping operation. High grade rubber shaped to grip tightly. Fit shafts of lapping tools shown here.

★VLC-28 $\frac{7}{16}$ " Diameter Cup.
★VLC-40 $1\frac{1}{4}$ " Diameter Cup.
★VLC-56 $1\frac{3}{4}$ " Diameter Cup.

TWELVE-POSITION HEAD AND ASSEMBLY HOLDER

Do Faster, Safer, Head and Valve, Carburetor, Transmission and Other Work with this Quick Change Holder.

- Holds parts securely in any one of twelve positions.
- Protects part from scuffing, saves bench space.
- Protects bench top, keeps work area clean.
- Provides easy, quick fastening of bracket to part and correct positioning for all types of work including:

Valve removal, valve seat grinding, carbon scraping, broken stud removal, valve spring assembly, carburetor servicing, starter and air-cooled engine servicing including aircraft, some transmission and differential work.

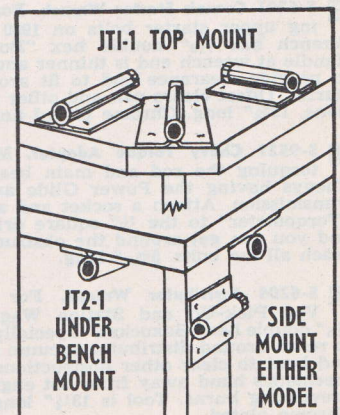
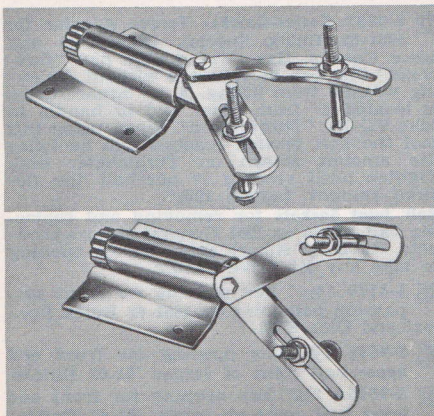
It takes very little space, holds virtually any V-8 passenger, compact, foreign, or air-cooled engine head, as well as many other heavy parts. Base bolts to bench... hex insert slides into base in any of twelve positions... to change position simply slide it out an inch or so and revolve to new position and push in. Brackets are adjustable and two $\frac{7}{16}$ " x $4\frac{1}{2}$ " bolts are furnished. Unit is all steel and plated.

JT-1 Set. For top of bench or side mounting.

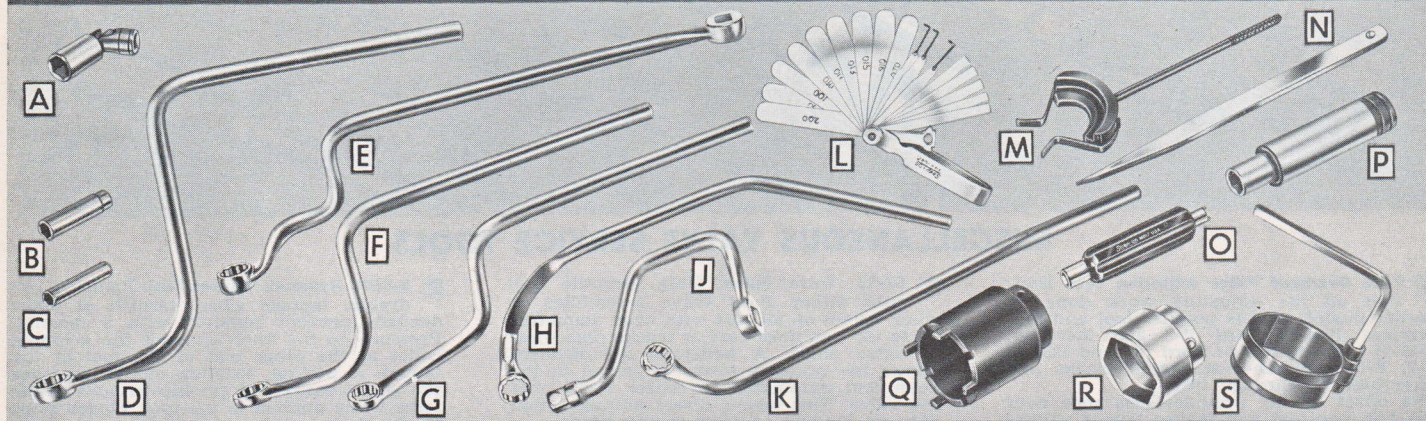
JT-2 Set. For under bench or side mounting.

JT-1-1 Base. For top of bench mounting.

JT-2-1 Base. For under bench mounting.



SERVICE TOOLS FOR GENERAL MOTORS CORP., CARS & TRUCKS



SPECIAL TOOLS FOR CHEVROLET AND CORVAIR

A S-9547 Exhaust Pipe Bolt Tool $\frac{1}{16}$ " Flex-socket for removing manifold exhaust pipe bolts on Chevy V-8 or other cars where extra bolt clearance is needed. Depth of broach $\frac{3}{4}$ ", $2\frac{3}{4}$ " long with $\frac{3}{8}$ " square drive. Speeds up the job.

Sockets for Plastic Nuts When self tapping screws project through the metal such as in the Chevy trunk or trim, the sharp points are protected by plastic nuts. Standard sockets are not broached deep enough for loosening or tightening the nuts and will damage them. These two sockets are made for this purpose, broached extra deep. Have $\frac{1}{4}$ " square drive.

B S-9550 $\frac{3}{8}$ " Hex, extra deep socket

C S-9549 $\frac{1}{16}$ " Hex, extra deep socket

D S-9541 Chevrolet Starter Wrench. A $\frac{3}{4}$ " double hexagon "Boxocket" for 1949 thru 1960 "6" cylinder Chevrolet. The top mounting bolt on these starters cannot be reached with ordinary wrenches but are quickly serviced with this time-saving tool. Overall length is $11\frac{1}{4}$ " with a $6\frac{3}{4}$ " handle offset.

E S-9545 Caster-Camber Torque Adaptor. For large, 348 cubic-inch Chevy engine (except 1959) as well as other 1955-62 Chevys. Has $\frac{1}{16}$ " double hex "Boxocket" and $\frac{1}{2}$ " square drive to take our TQ-150 "Torqometer." Extra leverage cuts torque reading in half. $14\frac{1}{4}$ " long, chrome plated. Its special shape and offset allows it to go under generator, past steering shaft and other obstructions.

F S-9546 Chevy Starter Wrench. For 1961-62 6 cylinder models. The upper starter retaining nut is located behind the starter solenoid. This wrench reaches the nut easily. The $\frac{1}{16}$ " double hex "Boxocket" is tapered to provide easy access. $12\frac{1}{4}$ " long, chrome plated.

G S-6203 Caster-Camber Wrench. For 1960-62 Chevy Corvairs. The length and special offset allows tool to be inserted under the fender to reach the adjusting bolt. Wrench has a $\frac{1}{16}$ " double hex "Boxocket" tapered to provide easy entry over the nut. Length is $10\frac{1}{2}$ " and the tool is Cadmium plated.

H S-6201 Corvair Starter Wrench. For servicing upper starter bolts on 1960 models. Wrench has $\frac{1}{16}$ " double hex "Boxocket." Handle at wrench end is thinner and curved to provide clearance and to fit around the starter. Offset clears pan and other obstructions. $12\frac{3}{8}$ " long. Chrome plated finish.

J S-9527 Chevy Torque Adaptor. Made for torquing the rod and main bearings of Chevys having the Power Glide automatic transmission. Attach a socket and a TQ-150 "Torqometer" to the $\frac{1}{2}$ " square drive ends and you can get around the obstructions to reach all the bolts. $5\frac{1}{16}$ " long.

K S-6204 Distributor Wrench. For Corvair Van Pick-Up and Station Wagon. Has $\frac{1}{16}$ " double hex "Boxocket." Specially curved to reach around distributor vacuum advance and bent to clear other obstructions. Keeps mechanics hand away from hot engine thus preventing burns. Tool is $13\frac{1}{4}$ " long and is Chrome plated.

L ★FB-379 Chevrolet Feeler Gauge. Contains nine $3\frac{3}{4}$ " blades in thicknesses of .006, .007, .008, .010, .012, .013, .015, .016, .020; five finger blades .016, .018, .019, .020, and .022; three wire gap gauges .032, .035 and .040 and an electrode.

M ★S-9529A Chevrolet Camshaft Holder. This tool is designed to hold the camshaft so as not to displace the freeze plug when replacing the camshaft gear. It is inserted over the camshaft between the last lobe and the bearing with the flat side of the tool toward the lobe. If a connecting rod is in the way, turn the engine with a GA44A Flywheel Turner until the S-9529A can be clipped into position. The gear can now be driven onto the shaft with no danger of dislodging the freeze plug.

N S-9533A Chevrolet Lock-Ring Spreader Tool. Expands lock ring into housing for removal of rear bearings on standard transmissions.

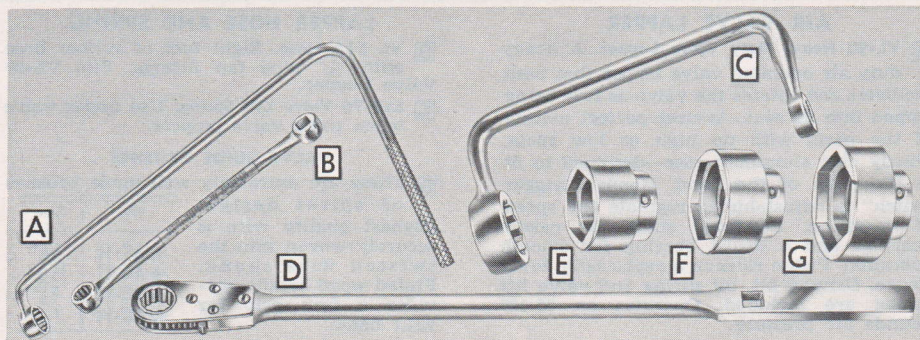
O MD-17 Distributor Terminal Tool. For the removal, replacement and adjustment of points on Chevy 6-cylinder, Delco-Remy distributors. Black, $\frac{7}{8}$ " diameter, plastic handle has an $1\frac{1}{32}$ " socket at one end and a pronged socket at the other. Will also prove useful for tune-up work, ignition work, under-dash repairs, on radios, heaters, wherever an $1\frac{1}{32}$ " nut is used. 4" long.

P S6205 9/16" and 13/16" Single Hex Socket. For tightening and torquing head bolts on Chevy Corvair. Two different size nuts are used and this socket makes it unnecessary to change sockets during operation. An internal spring keeps the $\frac{1}{16}$ " hex socket extended and retracts under pressure to allow the $1\frac{1}{16}$ " hex opening to be used. Has $\frac{1}{2}$ " square drive.

Q S-8695 Lug Socket. For removing front wheel assemblies on Chevy and Ford 4-wheel drive trucks. Lugs fit into recesses and slots fit over $\frac{3}{32}$ " pins in the nut. $\frac{1}{2}$ " square drive. A must for this job.

R S-6202 Socket for servicing Corvair ball joint suspension. Has $1\frac{1}{8}$ " single hex opening and $\frac{3}{4}$ " drive. For use in removal and replacement of front end lower ball joints. Diameter $2\frac{1}{2}$ ", $1\frac{1}{4}$ " long.

S ★RC-55 Piston Ring Compressor. Designed for use on the new type pistons used in 1955-62 V-8 engines where the distance from the top of the top ring to the bottom of the bottom ring is only one inch. Main belt is 1" wide with $\frac{1}{2}$ " wide tension band of fine spring steel. Friction grip holds the band compressed until you release pressure. Adapts to a $2\frac{1}{2}$ "-5" range of piston sizes.



SPECIAL TOOLS FOR BUICK AND OLDSMOBILE

A S-9838 Distributor Wrench with $\frac{1}{16}$ " double hex for turning distributor hold-down bolts on 1961-62 Buick Special and V-6 Special and Olds F-85. Shaft of wrench is angled to clear obstructions. $11\frac{1}{8}$ " long.

B S-8180 Torque Adaptor For 1961-62 Buick Special and Olds F-85 universal joints. Can also be used to good advantage on other cars. One end has $\frac{1}{2}$ " double Hex "Boxocket," other end has $\frac{3}{8}$ " square drive to be used with TQ-50AF or TQ-12B "Torqometers." Additional length requires adjusted dial reading which is printed on shank of tool. $7\frac{7}{8}$ " long, chrome plated.

C S-8178 Pitman Arm Nut Wrench Clears the cross member that blocks direct access to the Pitman Arm nut on 1961-62 Buick Special and Olds F-85. Used with TQ-150 "Torqometer" for final torquing. Has $1\frac{1}{16}$ " double hex "Boxocket" at one end and $\frac{1}{2}$ " square drive on other. Overall length is 8".

D S-9837 Caster-Camber Torque Adaptor for 1961-62 Buick Special, Olds F-85 and some Chevys. Has $1\frac{1}{16}$ " double hex "Boxocket" that can be reversed without removing wrench from fitting. A $\frac{1}{2}$ " square drive is located 4" from other end of handle to take TQ-150 "Torqometer." When using this tool the bolt tension reached will be twice the amount shown on Torqometer dial. Tighten until reading is one-half the desired amount. Length $19\frac{3}{4}$ ".

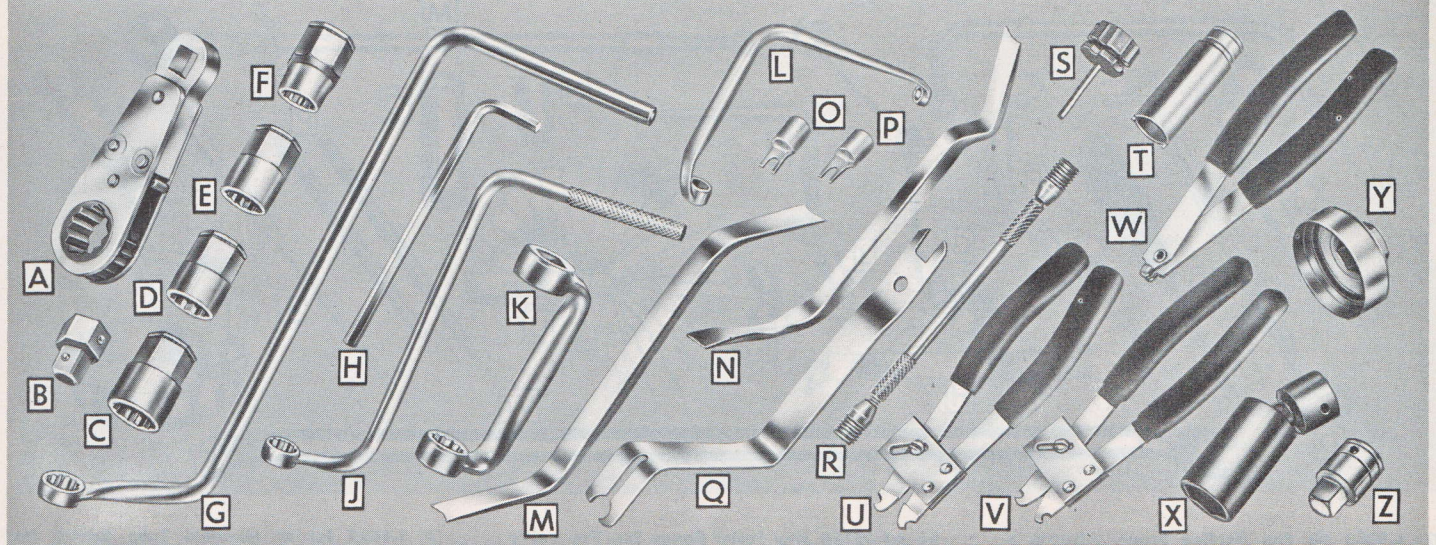
Ball Joint Sockets for removing and replacing ball joints on 1961 General Motors products. Have $\frac{3}{4}$ " square drive female opening to take any $\frac{3}{4}$ " drive handle.

E S-8179 $1\frac{1}{16}$ " hex opening for front suspension ball joint on 1961-62 Buick Special and Olds F-85.

F S-9835 $1\frac{1}{8}$ " hex opening for front end upper ball joint of larger '61-62 Buicks.

G S-9836A $2\frac{1}{4}$ " hex opening for front end lower ball joint on larger '61-62 Buicks.

SERVICE TOOLS FOR GENERAL MOTORS CORP., CARS & TRUCKS



Special Tools Shown Here and on the Following Pages Will Help You Turn Out the Work Faster and Easier

WA-306A Set of Caster-Camber Adjusting Tools For servicing Chrysler and General Motors cars. Set consists of the WA-28 Torque Adaptor Wrench and the five units listed below **A** to **F**. Each socket has a $\frac{7}{8}$ " hex to fit the WA-28 opening.

A WA-28 Torque Adaptor 5" long with $\frac{1}{2}$ " square drive opening for Torqometer attachment and a $\frac{1}{8}$ " double hex reversible ratcheting "Boxsocket."

B A-3078B Adaptor $\frac{7}{8}$ " hex to $\frac{1}{2}$ " square. Adapts the WA-28 to any $\frac{1}{2}$ " drive socket.

C S-9834-26 Special Socket $1\frac{1}{16}$ " double hex opening for late model Dodge, DeSoto and Chrysler.

D S-9834-24 Special Socket $\frac{3}{4}$ " double hex opening for 1950-60 Pontiacs.

E S-9834-22 Special Socket $1\frac{1}{16}$ " double hex opening for 1957-62 Chevy, 1959-62 Chrysler products, 1960-62 Buick.

F S-9834-20 Special Socket $\frac{5}{8}$ " double hex opening for 1957-59 Chrysler products.

G S-9832B Buick and V-8 Chevy Distributor Wrench. $\frac{9}{16}$ " double hex Boxsocket for 1953-62 models. 10" handle clears obstructions, $4\frac{1}{2}$ " offset handle. Head tapers from $2\frac{3}{4}$ " to $1\frac{1}{4}$ " at outside edge making it easier to remove wrench after nuts are loosened. A time saver.

H AWL-8 Caster-Camber Adjustment Wrench. For the hex head set screw adjustment on most GM cars. Wrench size $\frac{1}{4}$ " with a length of $2\frac{1}{4}$ ". Handle length is $4\frac{7}{8}$ ".

J S-8173 Olds, Buick, Cadillac and Packard Distributor Wrench. $\frac{1}{2}$ " double hex "Boxsocket" opening. The long handle affords $6\frac{1}{16}$ " clearance over obstructions putting your hands out in the open where there is less danger of bumping the distributor during the final tightening. This tool will also prove useful on many other hard to reach jobs on various cars.

K M-3502 Cylinder Head Wrench For use on GMC diesel engines and GMC V-6, V-8 and V-12 gasoline engines. The $\frac{5}{8}$ " double hex opening is directly in line with the $\frac{1}{4}$ " square drive to permit proper torquing with a TQ-150 "Torqometer" or with any $\frac{1}{2}$ " square drive "Torqometer." $4\frac{1}{2}$ " long, chrome plated.

L B-1463 Brake Bleeder Wrench Has $\frac{1}{4}$ " and $\frac{3}{8}$ " single hex openings for use on the smaller type fittings on the majority of General Motors, Ford and other new Compacts. "L" shaped with $\frac{1}{4}$ " end slightly tapered to allow for clearance when remov-

ing bleeder screw in bleeder valve. Heads are offset thus making it unnecessary to remove wrench from valve fitting in order to attach hose.

Brake Adjusting Tools of special design and shape provide clearance of obstructions and make brake adjustment fast and easy. Have tang at both ends. Chrome plated finish.

M B-1462 for cars and trucks with trailing arms such as 1958-62 Chevy trucks, GMC trucks, standard Buick, Olds and Pontiac. Each tang set at 64° but in opposite directions for use on right or left hand side of car. $8\frac{3}{4}$ " long.

N B-1461 for use on 1960-62 Corvair, Buick Special, Olds F-85, Rambler and Tempest. One tang set at 29° with a wheel finder radius for rear brakes, the other tang set at 45° with special curve to clear ball joint on front brakes. $8\frac{1}{4}$ " long.

Sockets for Use on SM and GSM Speed Nuts For removing and installing trim, emblems, fender moldings, ornaments on grills and fenders, etc., on GM cars where SM and GSM speed nuts are used. $1\frac{1}{4}$ " long with $\frac{1}{4}$ " square drive opening. Cadmium plated.

O S-9543 Socket for SM Speed Nuts

P S-9544 Socket for GSM Speed Nuts

Q ★S-9538A Door Handle Spring Remover. Designed especially for General Motors (except Cadillac) cars through 1962, it will work just as efficiently on Ford products and some other cars.

The straight open end opening is used for 1953-62 GM cars with the type door handles on which the inside flange construction of the handles was changed. The straight end of the S-9538A is inserted under and parallel to the handle. When the spring clip is engaged by the ends of the tool, a straight push snaps the spring out. For older models use the hook end.

R GA-55 Head Locator. Remove head bolts and screw the dowels into bolt holes by means of the center shaft. Shaft unscrews itself when dowel is seated. Tapered tops of dowels extending above cylinder block serve as hinges in removing, and as locators when returning the head. The dowels hold the gasket in position to line up with the bolt holes. Shaft is 5" long.

GA-55-1 Shaft only

GA-55-2 $\frac{7}{16}$ "—14 thread. Fits Chevy.

GA-55-3 $\frac{1}{2}$ "—13 thread. Fits Buick

S ★MD-16 Point Adjustment Tool. A $\frac{1}{4}$ " Hex Bit for adjusting points on all Delco-Remy window-type distributors with external adjustment. The SNAP-ON MT-415B or similar dwell meter should be used when making the adjustment. Disconnect thermo-

unit wire to permit access to housing window. Insert bit into adj., screw and turn until dwell meter indicates proper degree. 2" overall length. $1\frac{1}{4}$ " shank.

T ★S-9540A Windshield Wiper Socket. For 1955-60 General Motors cars. This pronged socket fits the outer escutcheon nut and the inner-retainer or spacer nut. Socket is $2\frac{3}{4}$ " long and fits over the wiper shaft. Also removes speed nuts on rear brake drums of most cars with flange-type axles. $\frac{3}{8}$ " square drive.

Cam Action Staking Tools. For installing and staking molding clips encountered on late model General Motors products. Units are of stamped steel with comfortable plastic coated handles. Cam action provides extremely high leverage. Three models.

U ★BF-151 Staking Tool. For use on the new narrow molding clips that have only a $\frac{1}{16}$ " slot used on Pontiacs, Olds and Buicks. Jaws are extremely thin. For wider type of molding use tools described below.

V BF-150 Staking Tool with both jaws having a staking point which is tapered from all angles to avoid wedging or sticking in the fastener. $6\frac{1}{2}$ " long.

W BF-175 Staking Tool to install and stake round, bulge-type clips on late model Buicks. Special shaped points assure positive stop in loading position, to eliminate dropping the clips during installation. Head is small enough to insert in $\frac{1}{4}$ " round clips, yet very strong. Overall length is $6\frac{1}{4}$ ".

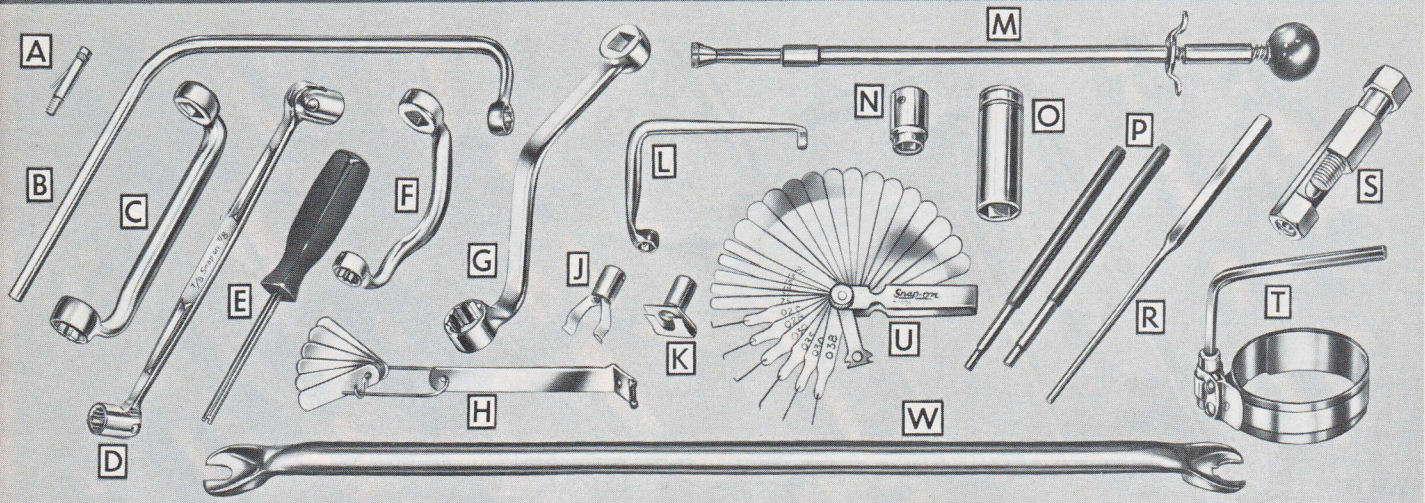
Special Oldsmobile Tools

X SIMB-280 "Flexsocket" with $\frac{7}{8}$ " single hex opening and $\frac{1}{8}$ " square drive. For use in making caster-camber adjustments on all 1961 and '62 Oldsmobiles except the F-85. When some of the shims have been removed or are missing on these cars the added bolt clearance depth of this socket allows unit to seat properly on adjusting nut. Overall length is $3\frac{1}{16}$ ". Black finish.

Y S-8182 Body Stud Nut Wrench for 1962 Oldsmobile. In use, the nut is dropped into the internal hex. The washer is next placed inside the circular housing and the rubber grommet then inserted. A $\frac{7}{8}$ " socket and extension handle is used on the external hex to hold the loaded tool up in the bolt well while the bolt itself is turned onto the nut and tightened from above. Tool handles both sizes of washers and grommets in use at present.

Z SPP-416 Pipe Plug Socket for turning 1961-62 Olds oil drain plugs which have a $\frac{1}{8}$ " double square recess and are installed almost flush with bottom of oil pan. Other wrenches will not do the job. Corners of the male drive are rounded and tapered for easy insertion. Can be used on any $\frac{1}{2}$ " square recessed plug. Has $\frac{1}{2}$ " square drive.

SERVICE TOOLS FOR FORD MOTOR CO., CARS & TRUCKS



A S-9080 Oil Pan Holding Screw. Affords a fast, easy means of holding Ford oil pans in position while the cap screws are being replaced. Two of the special screws are turned into opposite sides of the crank case flange and the oil pan is then slipped over them. The springs fastened in the side of the screws will catch on the oil pan flange and hold the oil pan so that both hands can be used to replace the cap screws.

B S-8564B Distributor Wrench for making adjustments easily and safely on 1952 through 1956 Lincoln and 1954 through 1962 Ford and Mercury. The handle is offset at 110° angle to clear obstructions such as coil, distributor leads, etc. thus minimizing danger of shocks. Provides faster, more efficient service. Has double hex $\frac{1}{2}$ " opening at right angle to shank to clear wires and tubes. Overall length 11 $\frac{1}{2}$ ".

C S-8683 Cylinder Head Wrench. $\frac{3}{4}$ " double hexagon "Boxocket" opening is for use on all 1958-1962 Fords and the small Mercury and Edsel engines. The wrench has a $\frac{1}{2}$ " square drive opening to fit the TQ-150 or other $\frac{1}{2}$ " square drive Torqometers to provide accurate torquing of the head bolts to manufacturers' specifications. Tool is 5 $\frac{3}{4}$ " long and is chrome plated.

D S-8693 Tappet Adjusting Wrench. A Flex-head wrench designed specifically for adjusting overhead valves on Ford and Chrysler products. The $\frac{3}{16}$ " and $\frac{1}{2}$ " double hex wrench openings have extra thick walls, specially heat treated to resist wear from adjusting the hardened self-locking adjusting screws. The heads are very flexible to ride with the tappet. The tool is 9 $\frac{3}{8}$ " long and provides hand clearance from hot engines.

E S-6404 Brake Spring Tool. for removing and replacing beehive-type brake shoe retainer springs used on Bendix-type brakes. Falcon, Comet and Lancer have this type of spring. The tip of this screwdriver-type tool is slotted to fit the retainer spring bracket. Downward pressure and a slight twist will remove or replace the spring. 6 $\frac{3}{4}$ " long.

F S-8681 Ford, Lincoln, Mercury Manifold Bolt Torque Adaptor. Use of this $\frac{3}{16}$ " double hex "Boxocket" with a TQ-150 Torqometer eliminates uneven tightening of exhaust manifold bolts on Continental, 1952-57 Lincoln, and 1954-62 Mercury and Ford V-8. Handle design clears the manifold. On Fordomatic equipped Fords the gear shift lever must be in "Low" position . . . the air intake heater duct must be removed on all models in order to service rear bolts on that side. Length is 4 $\frac{1}{16}$ ".

G S-8686A Caster-Camber Wrench. $\frac{3}{4}$ " double hex. For 1957-61 Ford, 1957-58 Mercury, and 1958 Edsel. Has double bend to provide clearance. $\frac{1}{2}$ " square drive designed to receive TQ-150 "Torqometer." Set Torqometer dial at one-half of desired torque.

H ★S-8678B Step Feeler Gauge Set. For valve adjustments on Ford 6's and V-8's, Mercury and Ford trucks using Lincoln V-8 engine without hydraulic valve lifters. Handle is bent to clear exhaust manifolds . . . no need to bend the blade. Raised nub in the handle spring clip engages the blade hole and holds the blade securely. Blades are 2" long with a $\frac{3}{16}$ " stepped end in following sizes. .008-.010, .014-.016, .015-.017, .017-.019, .018-.020, .020-.022, .025-.027.

S-8691 Tappet Inserter Set. One each of following tools. Provides a fast and easy method of inserting both "mushroom" and "straight" type tappets on Ford products (1954 through 1960 models). Designed for use with our TM-65 Flexible Adjusting Wrench (Page 18). These tools permit fast insertion of the tappets from beneath the car with the oil pan removed. Tappets can be replaced without removing the valley cover or cylinder head. Spring clamps hold tappet securely yet permit easy removal.

J S-8691-2 Tappet Inserter. For hydraulic valve tappets in 1958 through 1962 Ford products, consists of a wide spring clip mounted on the end of a cylindrical shank portion. The shank attaches to a TM-65 Wrench for use. This tool grasps the hydraulic valve tappet on the side. The TM-65 Wrench is shown on page 18.

K S-8691-1 Tappet Inserter. For "mushroom" type tappets on 1954 through 1962 Ford products, consists of a flat spring clip mounted on the end of a cylindrical shank portion. This shank portion has a $\frac{1}{4}$ " square opening to receive a TM-65 Flexible Wrench.

M S-8690 Hydraulic Tappet Tool. Designed for removing the hydraulic tappets on 1958-62 Fords and a majority of other cars. Where an accumulation of varnish or other deposits prevent removal with a magnet, this tool will prove extremely useful, removing the tappets quickly and easily. It is an expanding collet type tool, a plastic knob at one end operates the expanding collet at the other end. Two extensions or "ears" near knob enable user to keep pressure applied. Overall length is 14 $\frac{1}{4}$ ", net weight is 7 ounces.

N ★S-9025D Connecting-Rod Socket. A $\frac{3}{16}$ " single hex opening for Ford V-8. Outside diameter 2 $\frac{3}{8}$ ", nose diameter $\frac{3}{4}$ ", length 1 $\frac{1}{16}$ ", $\frac{1}{2}$ " sq. drive. While the thin walls are sufficiently strong for this job this socket should not be used for ordinary nut turning in place of standard sockets.

O SFS-2615 Spark Plug Socket. A deep single hex "Ferret" socket with a 1 $\frac{1}{16}$ " opening designed especially for spark plug work. It will fit all 14mm plugs that have a 1 $\frac{1}{16}$ " hex, plus the 18mm spark plugs being used on 1955-62 Fords, Mercurys, and Lincolns. Has greater internal diameter to provide more clearance. Outside diameter 1 $\frac{1}{16}$ ", 2 $\frac{3}{4}$ " long, $\frac{3}{4}$ " square drive.

P S-8685 Set of Manifold Tube Drivers for 1954-59 Ford and Mercury V-8's equipped with automatic choke. When tube is installed it is a very tight fit and after a period of time it "rusts out" and must be replaced—a difficult job unless you have these tools. Are of one-piece construction with turned ends which fit into ends of the tubes and provide a shoulder for tube to butt against when driving into position. Handle ends are specially heat treated to withstand hammer blows. Both drivers are 6" long. One is marked "Top" the other "Bottom." When removing tubes driver marked "Top" is on large end of tube and the other on the small end. Both ends are driven inward which cause tube to collapse and pieces are then removed. When installing, the large driver marked "Top" is used. Small end of heat tube is inserted into the large hole in intake manifold, lined up properly and driven into place.

S-8685-1 Top Manifold Heat Tube Driver.

S-8685-2 Bottom Manifold Heat Tube Driver.

R PC-107L Long Drift Punch, has straight section 4 $\frac{1}{4}$ " long for disassembly work on Ford standard 3-speed transmissions thru 1962 models. Used to drive out long retaining pin that holds counter shaft and reverse idler shaft. Overall length 8".

S S-8679A Front End Suspension Tool for use on 1954-60 Ford and Mercury, 1952-62 Lincoln, 1958 Dodge and Plymouth, and 1957 DeSoto automobiles. Has been designed to have a minimum length of 4 $\frac{1}{2}$ " and a maximum length of 5 $\frac{1}{2}$ ". This allows it to be used for the wide line of cars listed above. It is used when replacing spindles, upper and lower ball joints, coil springs and when replacing or rebushing the upper control arms.

T RC-55 Piston Ring Compressor for '55-62 Ford, Mercury and Lincoln and most other '55-62 V-8 engines where distance from top of ring to bottom of bottom ring is not more than 1". Main belt is 1" wide with $\frac{1}{2}$ " tension band. Friction grip holds band in compressed position. Tool adapts to pistons from 2 $\frac{1}{2}$ " to 5" dia.

U ★FB-359 Ford Feeler Gauge. Contains four spark gap bent wire feelers, .025, .028, .030, .035; two straight wire feelers for voltage regulator cutout .017, and .030; five ignition finger blades .013, .015, .016, .020, .025; fourteen stepground blades .010-.012, .011-.013, .012-.014, .013-.015, .014-.016, .015-.017, .016-.018, .017-.019, .018-.020, .019-.021, .021-.023, .023-.025, .024-.026, .025-.027, and an electrode bender.

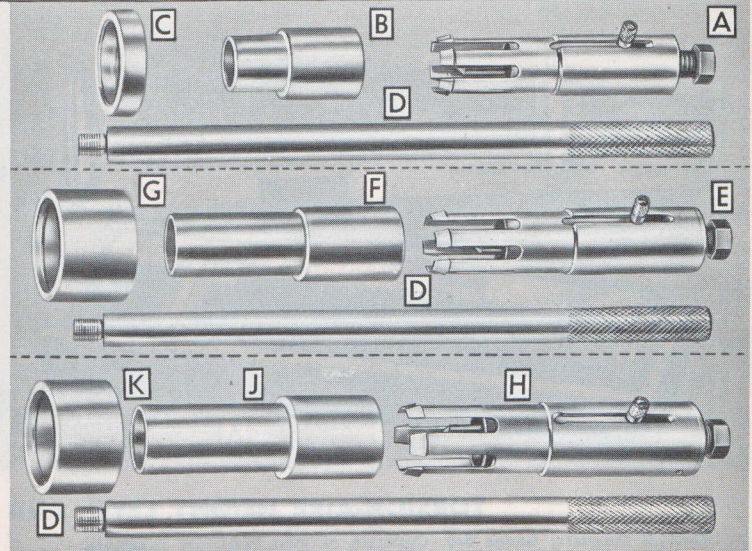
W S-9088B Ford Valve Lifter. A lifter especially designed for valve service work on Ford cars. Different size ends work on both V8-85 and V8-60 series cars giving you two tools for the price of one. Heads are individually drop forged from finest quality steel, then properly hardened and tempered to give maximum service under all operating conditions. Extra strength is incorporated in the heads by the side ribs which reinforce but do not interfere in any way with the use of the tool. Openings are $\frac{1}{2}$ " and $\frac{3}{16}$ ", stock diameter $\frac{3}{4}$ ", length 24".

BUSHING PULLERS AND DRIVERS FOR FORD PRODUCTS

These tools provide a safe, fast method of pulling and replacing the bushings and grease seals on the various cars made by the several divisions of the Ford Motor Company. They eliminate makeshift methods that could result in unnecessary damage to the car.

Bushing Pullers The jaws are inserted through the grease seal and between the bushing and the shaft. The spring tension of the jaws expands them so that the hook ends grip behind the bushing and they are held securely in this position by means of a sliding tube to give a slip-proof pulling grip. Turning the screw with a wrench easily removes both the bushing and the oil seal.

Bushing Drivers Used to install new bushings and oil seals the safe, easy way. The complete tool consists of a driver head and oil seal driver adaptor and a long driver handle. The handle screws into the driver head, the bushing is placed on the other end of the head and is driven into the shaft housing. A few light hammer blows on the handle does the job. The adaptor is then slid onto the driver head and is used to seat the oil seal in position. The adaptors are reversible to handle either type of oil seal used.



First Group for 1960-62 Falcon and Comet Cars

A S-6401 Puller Tool

S-6402 Bushing Driver Set, consists of the following three parts:

B S-6402-1 Bushing Driver Head

C S-6402-2A Oil Seal Adaptor

D S-8673-2 Driver Handle

Second Group for 1949-62 Ford and Mercury passenger and some 1958-62 Chevrolet cars with smaller bushings.

E S-8672D Puller Tool

S-8673B Bushing Driver Set, consists of the following three parts:

F S-8673B-1 Bushing Driver Head

G S-8673B-3 Oil Seal Adaptor

D S-8673-2 Driver Handle

Third Group for 1955-62 Ford Station Wagon, Thunderbird, Mercury, Lincoln and 1958-62 Ford passenger cars and Edsel with large type bushings.

H S-8687A Puller Tool

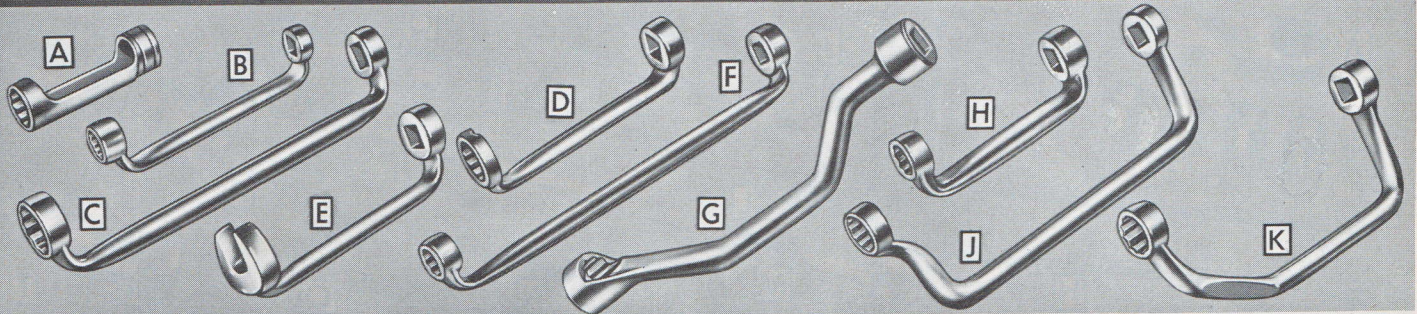
S-8688A Bushing Driver Set, consists of the following three parts:

J S-8688A-1 Bushing Driver Head

K S-8688A-3 Oil Seal Adaptor

D S-8673-2 Driver Handle

CYLINDER HEAD WRENCHES FOR CARS-TRUCKS-TRACTORS



A S-8677 Ford Head Bolt Adaptor. This $\frac{1}{16}$ " double hex adaptor is used with an SX-3 extension bar and the TQ-150 "Torqometer" for torquing head bolts close to the firewall on 1954-62 Ford and Mercury V-8's.

An SX-3 extension must be used as a 2" or 5" will not work in the space provided. The head bolts requiring this adaptor, are the No. 7 on the left hand bank and the No. 9 and No. 10 on the right hand bank. The No. 7 head bolt is back against the firewall under the rocker arm shaft. The No. 9 bolt is under the rocker arm shaft and the No. 10 is the lower bolt close to the firewall.

The S-8677 will work on all V-8 models with or without power brakes and on all models with the redesigned right hand exhaust manifold. $\frac{3}{4}$ " long with a $\frac{3}{16}$ " outside diameter and a $\frac{1}{2}$ " square drive.

B Ford Cylinder Head Wrenches. These units are specially designed for Ford products and Ford dealers yet any garage can use them profitably and to good advantage to do a perfect "torquing" job on cylinder heads. Two size wrenches are available, each has a double hex "Boxocket" opening as listed below. Hex head is properly offset to overcome clearance problems. Wrenches have a $\frac{1}{2}$ " square drive for use with a TQ-150 or other $\frac{1}{2}$ " square drive "Torqometer." The overall length is $5\frac{3}{4}$ ", chrome plated finish.

S-8683 Cylinder Head Wrench for small engines found on 1958-62 Ford, Mercury and Edsel. Has $\frac{3}{4}$ " double hex "Boxocket" opening.

S-8684 Cylinder Head Wrench for larger engines found on Edsel, Mercury and 1958-62 Lincoln. Has $1\frac{1}{16}$ " double hexagon "Boxocket" opening.

Recommended for use with

Snap-on
Torquometers

C M-4276A Cylinder Head Wrench. Services head bolts on Mack truck gasoline and diesel engines and also Massey Harris gasoline engine model 44-55. Also cylinder head nuts on series 500 Case diesels except those under the water manifold. The $\frac{7}{8}$ " double hexagon Boxocket end is $1\frac{3}{16}$ " in diameter and $\frac{1}{2}$ " deep to provide sufficient strength for the job yet give the necessary clearance. Can be used with any $\frac{1}{2}$ " square drive wrench handle. Overall length of $8\frac{3}{4}$ " puts the handle end out in the open above the rocker arms.

International Truck Cylinder Head Wrenches. While each of the two following wrenches have $\frac{3}{4}$ " openings the two different styles are both needed in order to service all the head bolts on overhead valve engines in International trucks. They sneak under the rocker arms, yet leave the square drive out in the open for easy turning with any $\frac{1}{2}$ " square drive handle or "Torqometer."

D M-4380 I.T. Cylinder Head Wrench. $\frac{3}{4}$ " double hex opening. Wrench wall is grooved to clear the washer on the rocker arm. Reaches countersunk head bolts $5\frac{1}{16}$ " long.

E M-4379 I.T. Cylinder Head Wrench. $\frac{3}{4}$ " open end wrench. Overall length $5\frac{3}{32}$ ".

F S-8164A $\frac{5}{8}$ " Double Hex Boxocket. Has $\frac{1}{2}$ " square drive. Services Rambler cylinder head studs and starter removal on Rambler V-8. Cylinder head torquing on most GMC V-6 and V-8 gas engines and GMC diesels. Cummins diesel compressor base bolts. Chrysler exhaust pipe flange nuts. Engine support bolts on Chrysler, Dodge and DeSoto. Steering arm nuts on Farmall Tractors and many other applications. $9\frac{1}{4}$ " long.

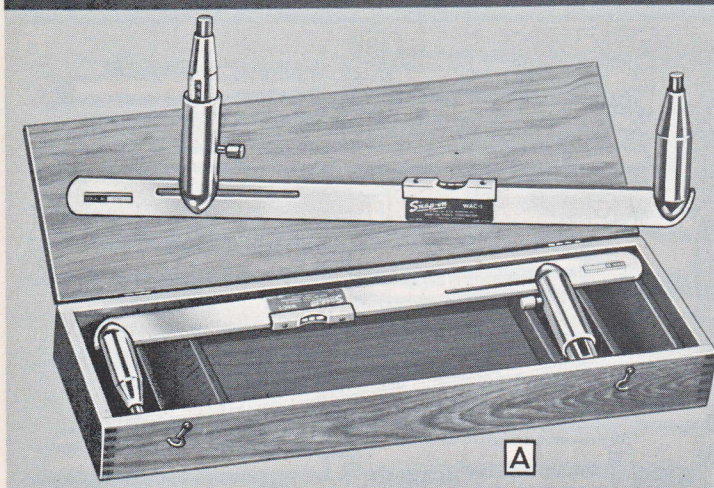
G M-1301A Cummins Head Bolt Torque Adaptor has $1\frac{1}{4}$ " "Boxocket" opening to handle bolts around water manifold jacket on model "H" engines without removing manifold from engine. 12" long. Fits all $\frac{3}{4}$ " square drive handles. Use TQ-602A "Torqometer" to torque bolts to required 450 foot pounds.

H M-3502 Cylinder Head Wrench. $\frac{5}{8}$ " double hex opening. For use on GMC diesel engines and GMC V-6, V-8 and V-12 gasoline engines. Overall length is $4\frac{1}{2}$ ". $\frac{1}{2}$ " square drive.

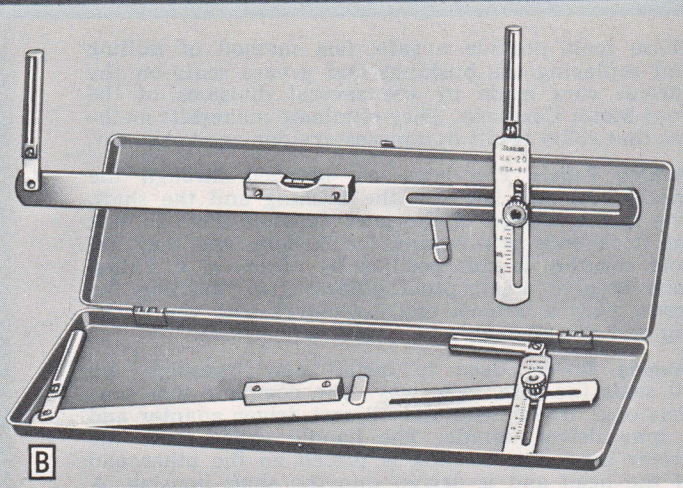
J S-8663A Cylinder Head Wrench. $1\frac{1}{16}$ " double hex opening. For Pontiac, Studebaker, Ford, Chrysler Windsor, Willys "F" Head 4 and 6 cylinder Jeeps and cars, VA series Case tractors and Ferguson tractors. length is $7\frac{3}{16}$ ". $\frac{1}{2}$ " square drive.

K S-9513C Cylinder Head Wrench. $\frac{3}{4}$ " double hex opening. For Chevy and Ford product engines under exhaust manifold, White trucks, Twin Coach, Allis-Chalmers tractors, Oliver series 66, 67 and 88 tractors and Farmall "H" tractors. Made of $\frac{1}{2}$ " stock with $2\frac{1}{4}$ " offset for rocker arm clearance. Overall length is $6\frac{1}{2}$ ". $\frac{1}{2}$ " square drive.

SPECIAL TOOLS FOR CHRYSLER BUILT CARS



A



B

TORSION-AIRE HEIGHT LEVEL AND RIDE CONTROL GAUGE SETS

A WAC-2A Magnetic Gauge Set. Consists of two WAC-1A magnetic gauges in sturdy wood case. These fine gauges are quality built with a sturdiness that will give you long and accurate service. The aluminum magnet arms are long and tapered and are fitted with $\frac{1}{2}$ " diameter magnets that will fit the 1962 as well as earlier models of Chrysler and GMC products with torsion-aire suspension. The leveling bubble and vial is easy to see and is attached to a 20" polished aluminum shaft. One magnet holder swivels and the adjustable height magnet holder slides to the correct position. No calculations are needed and adjustments are made with the gauges in position.

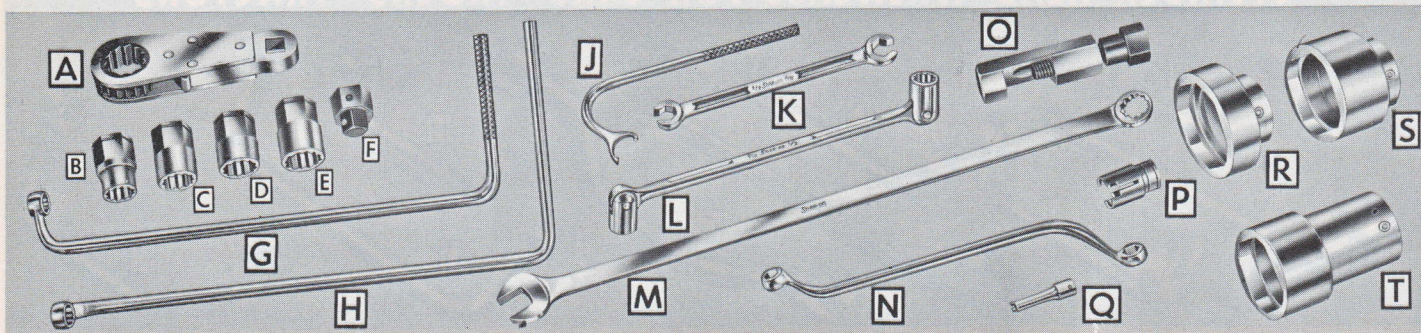
WAC-1A Individual Magnetic Gauge.

WAC-1-5A Adaptor. For converting older model gauge WAC-1 for use on 1962 as well as all previous Chrysler products. Two adaptors are required for each gauge.

B WA-22-B Magnetic Gauge Set. Consists of two WA-20 Magnetic Gauges in KRA-283 metal box. This set is needed for all Chrysler and GMC products with torsion-aire suspension and a *must* for the 1962 models because the small diameter of the magnets allows them to fit through the $\frac{1}{2}$ " width of the contact point at the inner end of the lower control arm. Unit consists of an 18" stainless steel bar with magnet arm at each end—one arm is hinged to the "level" bar and the adjustable height arm may be slid to the proper position on the level bar and clamped at the correct height by means of a knurled screw. A bubble level, mounted on the stainless steel bar indicates when the height is properly adjusted. Complete instructions included. Metal box is $19\frac{1}{4}$ " long by $5\frac{3}{8}$ " wide and $1\frac{1}{4}$ " deep, red enamel finish.

WA-20 Individual Torsion Bar Height Gauge.

KRA-283 Metal Box only.



WA-306A Set of Caster-Camber Adjusting Tools. For servicing Chrysler and General Motors products as listed below. Set consists of the WA-28 Torque Adaptor and the 5 special units listed below. Each socket has a $\frac{7}{8}$ " hex to fit the WA-28 opening.

A WA-28 Torque Adaptor 5" long with a $\frac{1}{2}$ " square drive opening in handle and a $\frac{7}{8}$ " double hex reversible ratcheting "Box-socket". When used with the TQ-150 Torq-meter it provides an accurate method of adjusting without oversteering.

B S-9834-20 Socket. Has $\frac{5}{8}$ " double hex opening for 1957-59 Chrysler products.

C S-9834-22 Socket. Has $1\frac{1}{16}$ " double hex opening for 1957-62 Chevy, 1959-62 Chrysler products and 1960-62 Buick.

D S-9834-24 Socket. Has $\frac{3}{4}$ " double hex opening for 1958-62 Pontiacs.

E S-9834-26 Socket. Has $1\frac{3}{16}$ " double hex opening for late model Dodge, DeSoto and Chrysler.

F A-3078B Adaptor. Has $\frac{7}{8}$ " to $\frac{1}{2}$ " square drive. Adapts the WA-28 to any $\frac{1}{2}$ " drive socket.

G S-9467B Chrysler Line Distributor Wrench. A $\frac{7}{16}$ " double hex "Boxocket" for loosening or removing the distributor on Chrysler, Dodge, DeSoto and Plymouths. Reaches around distributor to do a fast job. Length from handle to wrench head is $11\frac{23}{32}$ "

H S-9476A Distributor Wrench. $\frac{1}{2}$ " double hex for 1954-62 8 cylinder Chrysler, DeSoto and Dodge. Has longer shank to clear wires around distributor. Air filter must be removed before bolts can be serviced. 12" long, 5" handle.

J S-9481A Adjusting Nut Wrench for emergency brake on all old and new model Chrysler products having an internal expanding hand brake adjustment. Designed to get past all obstructions such as the rear cross member and do the job quickly and efficiently. Chrome plated finish.

K RXV-1215S Flare Nut Wrench. This wrench has "Boxocket" openings of $\frac{3}{8}$ " and $1\frac{1}{32}$ " with slotted walls to fit over hydraulic and oil line fittings of Chrysler cars. Overall length 6 $\frac{3}{4}$ ".

L S-8693 Tappet Adjusting Wrench for use in adjusting the overhead valves on both Ford and Chrysler products. Heads of the wrench are very flexible to "ride" with the tappet. Extra long handle provides leverage needed and allows mechanic to keep his hands away from hot engine. Socket heads have extra thick walls, specially heat treated to resist wear. Has $\frac{7}{16}$ " and $\frac{1}{2}$ " double hex openings. Head diameters are $2\frac{3}{32}$ " and $2\frac{5}{32}$ ". Overall length is 9 $\frac{3}{8}$ ". Chrome plated.

M S-9465A Fluid Drive Wrench. Combination "Boxocket" and open-end services the flange stud nuts that hold the fluid drive assembly to the crankshaft flange. Both openings are $\frac{5}{8}$ ", overall length 17".

N B-1460B Brake Wrench for 1955-62 Chrysler products. A "Boxocket" with $\frac{3}{8}$ " and $\frac{7}{16}$ " single hex openings. $\frac{3}{8}$ " for brake bleeder valves, $\frac{7}{16}$ " for brake shoe eccentric bolts. The $\frac{7}{16}$ " end is offset to clear drag link arm and recessed plate on front wheels. 9 $\frac{1}{2}$ " long.

O S-8679A Front End Suspension Tool for 1957-62 Dodge, Plymouth, Chrysler, and 1957-60 DeSoto. Minimum length $4\frac{1}{4}$ " to $5\frac{1}{2}$ " maximum. Used when replacing spindles, upper and lower ball joints coil springs and when replacing or rebushing upper control arms.

P S-9459B Wing Nut Socket. This is a dual purpose socket for Chrysler work. Narrow slot $\frac{1}{8}$ " wide by $1\frac{3}{16}$ " deep for value cover wing nuts. The wing nut stays in the socket when unscrewed . . . or it can be placed in the socket for reinstalling. Drain cock slot is $\frac{3}{8}$ " wide by $\frac{5}{16}$ " deep. $\frac{3}{8}$ " square drive. Overall length 1 $\frac{3}{8}$ ".

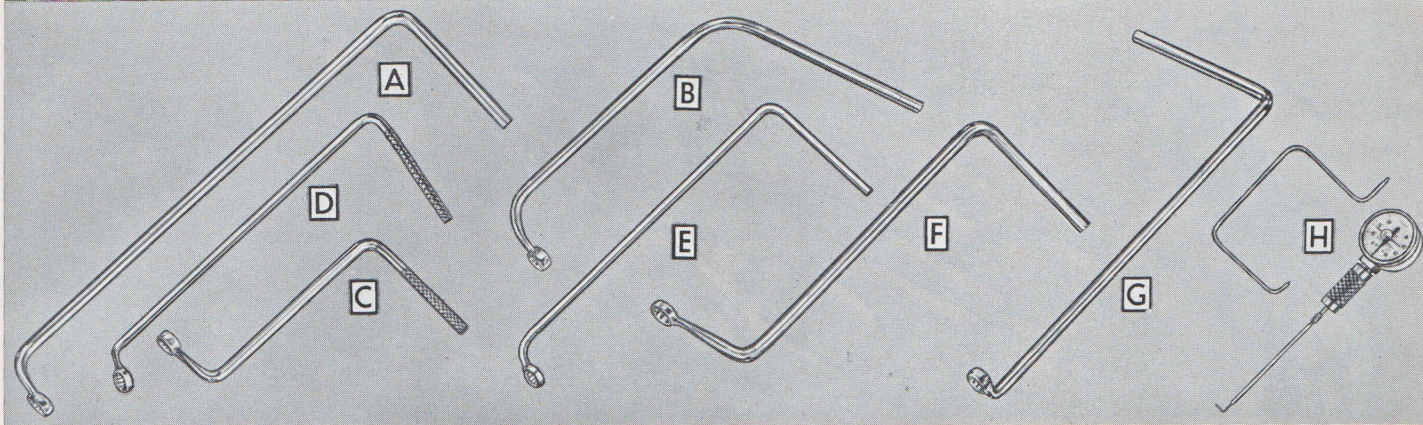
Q S-9458 Dash Nut Socket. A pronged socket to fit panel switch and control nuts on Chrysler line cars. Outside diameter of nose $\frac{5}{16}$ ", length 1 $\frac{1}{4}$ ". $\frac{1}{4}$ " square drive.

R S-9479 Special Suspension Ball Joint Socket. For DeSoto and Chrysler. $2\frac{1}{8}$ " diameter, $\frac{3}{4}$ " square drive.

S S-9365A Special Suspension Ball Joint Socket. For Dodge and Plymouth. $1\frac{1}{8}$ " diameter, $\frac{3}{4}$ " square drive.

T S-6302 Special Suspension Ball Joint Socket. For 1960-62 Valiant. $\frac{3}{4}$ " square drive.

SPECIAL TOOLS FOR DISTRIBUTOR SERVICE



A S-8176 Distributor Wrench for 1956-62 Pontiacs and Oldsmobiles. Has $\frac{9}{16}$ " double hex. Reaches in between the distributor and fire wall on these cars where standard tool will not work. 16" long. Chrome plated.

B S-8564B Distributor Wrench for making adjustments easily and safely on 1952 through 1956 Lincoln and 1954 through 1962 Ford and Mercury. The handle is offset at 110° angle to clear obstructions such as coil, distributor leads, etc. thus minimizing danger of shocks. Has double hex $\frac{1}{2}$ " opening at right angle to shank to clear wires and tubes. Overall length 11 $\frac{5}{8}$ ".

C S-8173 Olds, Buick, Cadillac and Packard Distributor Wrench. $\frac{1}{2}$ " double hex "Box-ocket" opening. The long handle affords 6 $\frac{1}{4}$ " clearance over obstructions putting your hands out in the open where there is less danger of bumping the distributor during final tightening. Useful on other jobs.

D S-9838 Distributor Wrench. $\frac{9}{16}$ " double hex for turning the distributor hold-down bolts on 1961 and 1962 Buick Special and V-6 Special, and on Oldsmobile F-85. The opening and the knurled handle are parallel, but the shaft of the wrench is angled outward to clear obstructions on these engines. Overall length of the wrench is 11 $\frac{1}{2}$ inches.

E S-9467B Chrysler Line Distributor Wrench. A $\frac{7}{16}$ " double hex "Boxocket" for loosening or removing the distributor on Chrysler, Dodge, DeSoto, Plymouths, Dart and Valiant. Reaches around distributor to do a fast job. Length from handle to head is 11 $\frac{23}{32}$ ".

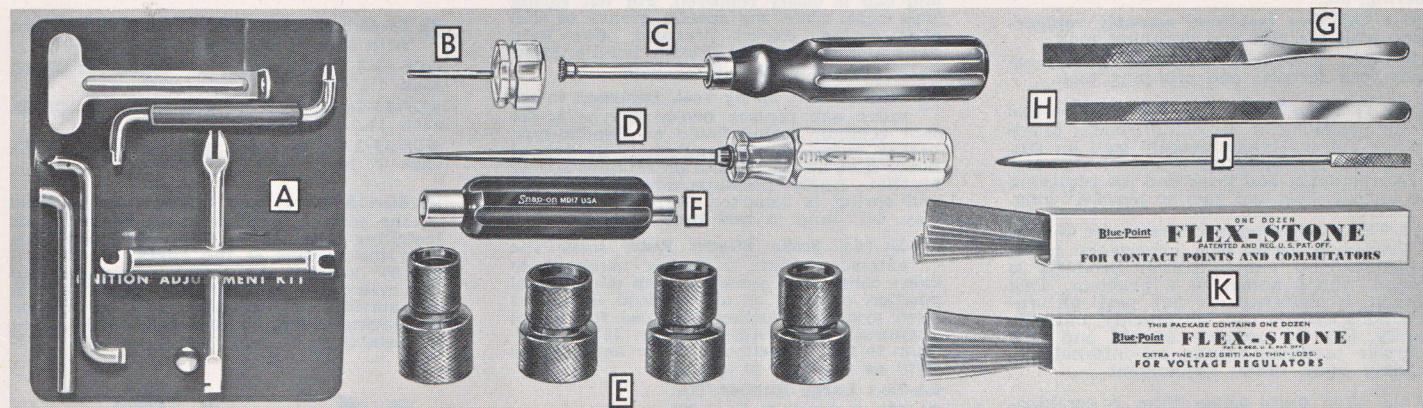
F S-9832B Buick and V-8 Chevy Distributor Wrench. $\frac{9}{16}$ " double hex Boxocket for 1953-62 models. 10" handle clears obstructions. 4 $\frac{1}{4}$ " offset handle. Head tapers from $\frac{23}{64}$ " to $\frac{1}{4}$ " at outside edge making it easier to remove wrench after nuts are loosened. A time saver.

G S-9476A Distributor Wrench. $\frac{1}{2}$ " double hex for 1954-62 8 cylinder Chrysler, DeSoto and Dodge. Has longer shank to clear wires around distributor. Air filter must be removed before bolts can be serviced. 12" long, 5" handle.

H MT-104 Distributor Point and Generator Brush Rig Tension Gauge. This is an extremely accurate gauge designed for either push or pull action when testing the tension of distributor points on cars and most trucks, and for a pulling test of the pressure of brushes against generator commutators. Dial is calibrated 0-40 ounces for pull or push action.

A "lazy-hand" holds the highest tension reached and permits the user to watch the points or brushes to see when they open.

The straight extension is used for distributor points and the bent extension for Generator Brush rigs. Extension ends are threaded for attaching.



A ★TK-50 Tune-O-Kit. Handles aligning and adjustment of the voltage regulators and distributors on most cars. Set contains following tools, in pocket size plastic kit bag.

★TK-30 Ignition Point Aligning Tool. For Delco and Autolite distributors.

★TK-31 Ford Distributor Tool. Adjusts vacuum control spring tension.

★TK-32 Voltage Regulator Tool. Adjusts most types of voltage regulators.

★TK-33 Offset Screw Driver. For ignition point clamp screw on Ford V-8.

★TK-34 Ford Voltage Regulator Tool. For voltage regulator adjustments.

B ★MD-16 Point Adjustment Tool. A $\frac{1}{8}$ " Hex Bit for adjusting points on Delco-Remy window-type distributors with external adjustment. The SNAP-ON MT-415B or similar dwell meter should be used when making the adjustment. Disconnect thermounit wire to permit access to housing window. Insert bit into adj., screw and turn until dwell meter indicates proper degree. 2" overall length.

C ACD-12 Distributor Cleaning Brush. Wire brush cleans terminal connections on distributor and coil. 5 $\frac{1}{4}$ " long, handle 4", wire diameter .012".

D ★STP-5A Spark Tester, neon type with sharp tapered prod and shock-proof plastic handle for use on ignition systems with shielded plugs. Tubes replaceable.

★NT-2 Neon Tube, for above tester.

E ★Distributor Rubbing Block Surfacers. Surfaces new breaker arms to conform with distributor cam. Removes high spots or rough surfaces which wear and cause bad timing, missing, hard starting, etc. Work on 6 and 8 cylinder distributors.

★TK-15 Surfacer.....For Delco-Remy

★TK-20 Surfacer.....For Auto-Lite

★TK-25 Surfacer.....For Ford and Mercury

★TK-26 Surfacer.....

.....For '57-62 Ford & Mercury 8-Cyl.

★TK-104 Set, one each of above.

F MD-17 Distributor Terminal Tool. For the removal, replacement, and adjustment of points on Chevy 6-cylinder, Delco-Remy distributors. Black plastic handle has an 11 $\frac{3}{32}$ " socket at one end and a pronged socket at the other. Overall length is 4".

▲ **G ★HB-5 Ignition Point File.** A fine double-cut tungsten file for spark plug and distributor points and other contact points.

H ★HB-2470 Voltage Regulator Point File. An extra thin file with a very fine cut. It is 5" long, $\frac{5}{16}$ " wide and .015" thick.

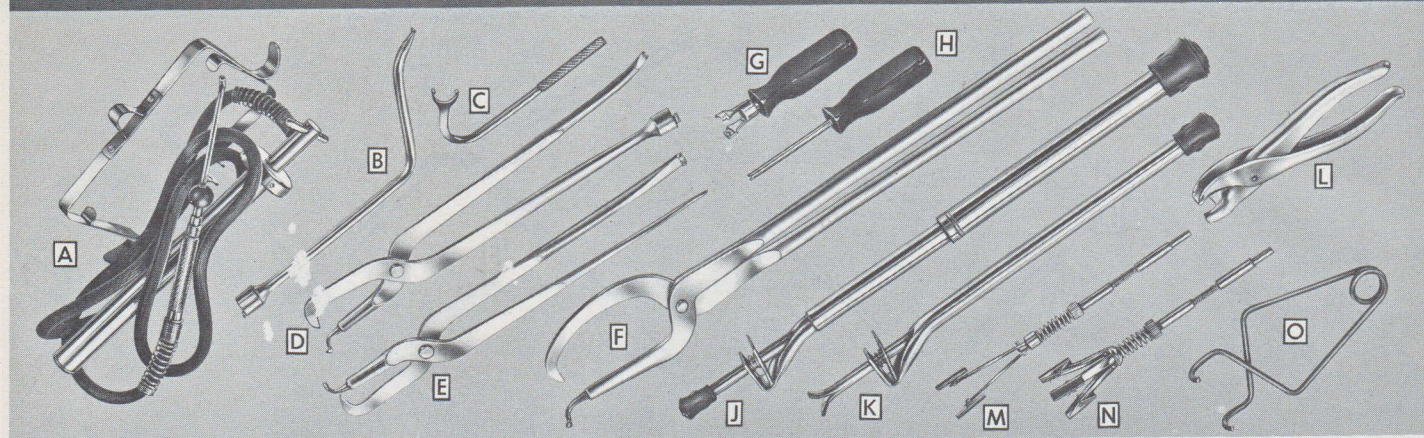
J ★HB-1997 Voltage Regulator Riffler. This file has one curved and one flat tip, recommended for removing pits and corrosion from voltage regulator contact points. 6" long.

K Flex-Stones. For truing ignition points. Economical—long lasting—flexible—non-conductors of electricity—plastic material imbedded with highly vitrified abrasive.

★GA-3 Flex-Stones. (.050" thick.) Pkg. of 12.

★GA-43 Thin Flex-Stones. (.025") For Voltage Regulator work. Package of 12.

SPECIAL BRAKE SERVICE TOOLS



A ★MBF-1 Brake Fluid Dispenser. Always delivers clean fluid to the brake cylinder because it is designed to fit into a standard one gallon can of clean brake fluid. As it stays in the can until empty there is no possibility of dirt entering at any time.

The unit has a self-contained, spring loaded piston—you simply pull up on the handle and the dispenser is "loaded" with 2 oz. of fluid under pressure. A self closing valve is actuated by the black ball—pull it back and you can deliver a few drops or a full 2 oz. of fluid. You have absolute control of the amount dispensed.

Each unit comes with five feet of oil proof hose with spring guards at both ends to prevent kinking or breaking. A hose rack is also included that attaches to the can to hold the hose off the floor when not in use. The long bent nozzle makes it easy to reach the master cylinder regardless of its position in the car. The can is not included with the unit. Also used for shock absorbers, power steering, etc.

MBF-1-2A5 Five foot hose assembly replacement with ferrules and crimping tool.

MBF-1-2A7 Seven foot hose assembly replacement with ferrules and crimping tool.

B BT-11 Brake Spring Tool. An efficient tool for removing or replacing Bendix brake springs but will work equally well on any spring that is attached to a post. Socket end is for removing and hook end for replacing the springs. Fast and easy to use. 9¾" long.

C S-9481A Adjusting Nut Wrench for Chrysler Emergency Brake. The emergency brake adjustment on later Chrysler products is located where access is a problem. This wrench is designed to get past all obstructions and do the job quickly and efficiently. Can be used on all old and new Chrysler products having an internal expanding hand brake adjustment.

D No. 131A Brake Spring Pliers. A combination tool that can be used for the removal and replacement of Bendix, Lockheed and other hydraulic and mechanical brake springs. The steel hook on the jaw is replaceable if necessary. Handles provide socket-type spring remover and hook end replacer. Overall length 13¼". Rust resistant plating. Hook is not guaranteed.

EVERY GARAGE CAN USE THIS EFFICIENT BLEEDING TANK (Right)

A B-100D Brake Bleeding Tank. Here is a light weight Universal pressure brake bleeder that fills and bleeds brakes in one simple operation. Designed for efficient, easy use on both standard and power brake systems. It has several time saving and safety features that are exclusive. Tank has capacity of one gallon, enabling you to use 110 ounces of brake fluid—large enough so that it does not have to be filled every few days. Pressure eliminates guess work, is easy to read with colored scale from 0 to 60 allowing higher pressure than the 15-20 pounds needed so that tests for leaks can be made. T handle is also filler plug. A hanging chain is part of handle. Air intake valve is machined to take standard valve core, eliminates pumping for pressure. The safety valve is factory set for 40 lbs. When pressure is released it will automatically reset at 20 lbs. or over. The visual fluid check windows tell at a

E No. 31B Brake Spring Pliers. Simplify removing and replacing brake springs. Inserted steel hook jaw is replaceable if necessary. Ends of handles are designed for use when replacing springs on Bendix type brakes and the center plane type on Chrysler. 13¾" long. Rust resistant plating.

★No. 31-3 Extra Hook. Fits both brake spring pliers listed above.

F 231 Truck Brake Spring Pliers. For removing and replacing the heavy brake shoe return springs on some models of Huck, Lockheed, Wagner and other trucks. This big, sturdy plier makes the job easier and safer for the mechanic. 20¼" long, its ample leverage requires very little effort to stretch the spring.

★231-3 Replacement Hook. For above plier.

G B-1356A Brake Shoe Spring Tool. Designed to remove and replace brake shoe retaining spring caps on all model cars. Both the coil spring type and flat spring type caps can be removed safely and easily. For coil spring caps place tool over cap, twist and cap is easily removed. For flat spring type caps, place the special groove of tool over spring, expert pressure, give light twist and remove cap. Plastic handle. Metal parts chrome plated, 5½" long.

H S-6404 Brake Spring Tool. Designed to remove and replace bee-hive type brake shoe retainer spring found on Bendix-type brakes. Insert tool through hole in web of brake shoe and place slot on retainer spring bracket. Apply pressure downward, twist and spring is removed. Replaced in same way. 6¾" long. A real time saver.

J GA-73A Brake Bleeder Pedal Jack. The extension shaft is spring mounted to exert continuous pressure even when pedal position changes as air or fluid is vented from system. Excellent for use for wheel alignment work. Adjusts from 15¼" minimum to 26¼" maximum. Lever action grips tight as pressure is applied.

GA-73-1 Large Rubber Tip.

GA-37A-2 Small Rubber Tip.

K GA-36A Brake Pedal Jack. A lightweight telescoping jack that adjusts to any position from 16" to 26". Frame is of 5/8" aluminum tubing with a 3/4" diameter push rod. Lever action grips tighter as more pressure is applied. Has GA-37A-1 rubber tip on one end and metal fork on the other.

L ★GA-72 "C" Washer Pliers. It's simple to remove a stuck "C" washer, replace it on the anchor post, or crimp lock it in place—all with this one tool, it's a one hand operation. Works on all Lockheed hydraulic brake systems. Smooth, rounded handles, overall length 7¾".

Small Cylinder Hones for deglazing and honing cylinders. Excellent for brake work, instantly recondition master cylinder. Used also on small engines such as Volkswagen. Speed up new ring break-in. Stones carrier on free-swinging, self-centering shoes. Screw controls tension. Flexible cable eliminates need for perfect line up. Use with ¼" electric drill. Flexible cable not guaranteed. Lubricate while honing, brake fluid is satisfactory.

M CF-64 two-arm hone for ½" to 2" diameter cylinders with 2 med. grit stones, each 1¼" long.

★CF-64-1 Set of 2 med. grit stones for CF-64.

★CF-64-14 Set of 2 fine grit stones for CF-64.

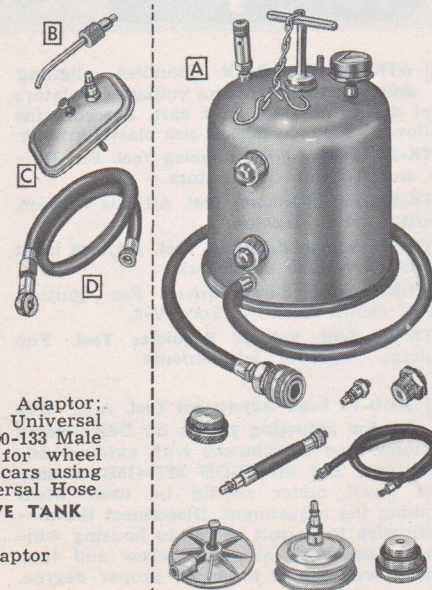
N CF-63 for ¾" to 2½" diameter cylinders, with 3 med. grit stones, ¾" x 1½".

★CF-63-1 Set of 3 med. grit stones for CF-63, each 1½" long.

★CF-63-14 Set of 3 fine grit stones for CF-63, each 1½" long.

★CF-63-2 Set of 3 med. grit stones for CF-63, each 2" long.

O BL-41A Set of Four Cylinder Clamps. Hold the pistons in place when replacing or installing brake shoes. The semi-circle ends hold the pistons at the edges, are turned out 90° without the prongs projecting into the cylinder thus possibility of damage is eliminated. Easy to apply with no chance of leaving clamp on brake cylinder when reassembling. 6" long, closes to 1¼".



It comes complete with a B-100-14A Chrysler Adaptor; B-100-137 Ford-Falcon Adaptor; B-100-131 Small Universal Adaptor; B-100-132 Large Universal Adaptor; B-100-133 Male Quick Coupler Fitting; B-100-26 Bleeder Hose for wheel cylinders; B-100-25 Plug for master cylinder on cars using two master cylinders and a B-100-40 Short Universal Hose.

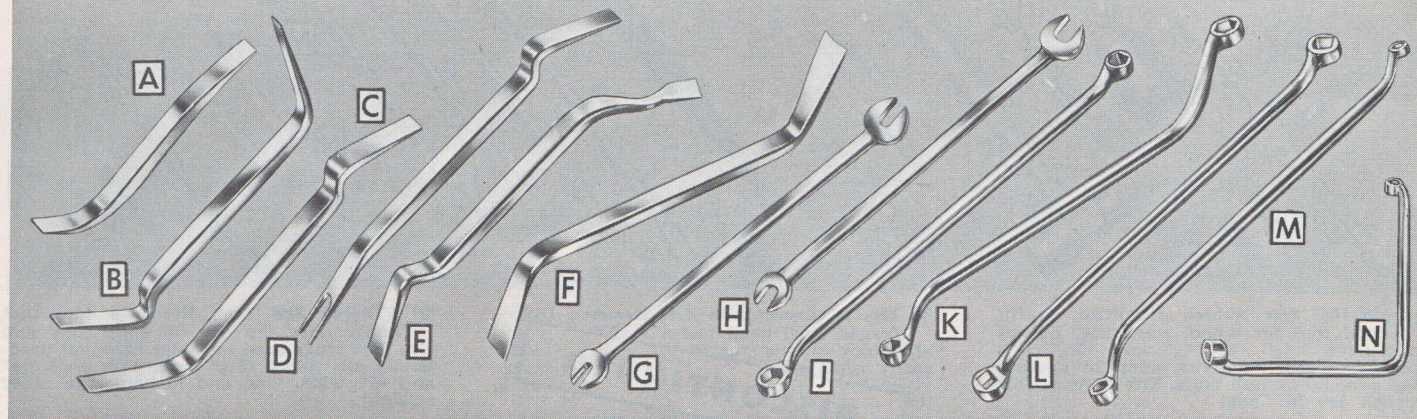
OPTIONAL UNITS—NOT INCLUDED WITH ABOVE TANK

B B-100-134 Master Cylinder Filler Attachment

C B-100-139 GMC and Chevrolet Light Truck Adaptor

D B-100-135 Portable Air Filler Hose

SPECIAL BRAKE SERVICE TOOLS



A S-9523 Chevy Brake Adjusting Tool. A short, star nut turning tool that is necessary for brake adjusting work on Chevy trucks with overload springs. Different angles at each end take care of the clearance problems brought about by the additional springs. Will also prove ideal for other cars and trucks. Blades are $\frac{1}{32}$ " wide. Overall length of tool is $\frac{5}{4}$ "

B S-9153B Pontiac Brake Adjusting Tool. Specially designed to adjust brakes on Pontiac cars up to 1960 models. It is made to work around or through all interfering parts such as frame fittings, etc. $\frac{1}{2}$ " wide blades are just the right thickness to do an accurate, fast, and easy job and are both bent in the same direction to provide a flat surface for the hand during the tightening operation. Overall length of the tool is $\frac{7}{8}$ ".

C B-3404B Brake Adj. Tool. Services many Bendix and other brakes using star adjusting nut except those on Chevrolet. The tool is $8\frac{3}{16}$ " long.

D S-8353B Bendix Brake Adj. Tool. Speeds work on late model Bendix brakes with rubber plug in adjustment opening. Insert the pronged end under the plug, pry it out and leave it in the prong for fast replacement after adjusting is made. This adjusting tool is $8\frac{7}{8}$ " long.

E B-1461 Brake Adjusting Tool. For 1960-62 Corvair, Buick Special, Olds F-85, Rambler and Tempest. One end has wide set tang at 29° angle for use on rear brakes, other end of 45° angle for front brakes. $8\frac{1}{4}$ " long.

F B-1462 Brake Adjusting Tool. For rear brakes of cars and trucks with trailing arms such as 1958-62 Chevy trucks, GMC trucks, standard Buicks, Olds and Pontiacs. Tang at each end set at 64° but in opposite directions, one for right hand side and other, left hand side. $8\frac{3}{4}$ " overall, chrome plated finish.

G B-1351A Bendix Brake Wrench. Designed for eccentric cam on Bendix Internal Brakes and gives the two most needed sizes of openings, $8\frac{1}{2}$ " long, $\frac{1}{4}$ " head thickness. $\frac{3}{16}$ " and $\frac{1}{4}$ " openings.

H S-8652A Ford Brake Eccentric Wrench. A special wrench to fit the brake eccentric adjusting screw on 1939 thru 1948 Ford passenger car and truck hydraulic brakes. Just right for fast easy work. Overall length of tool is $8\frac{1}{2}$ ". Small heads are broached with $\frac{7}{16}$ " and $\frac{3}{8}$ " wrench openings.

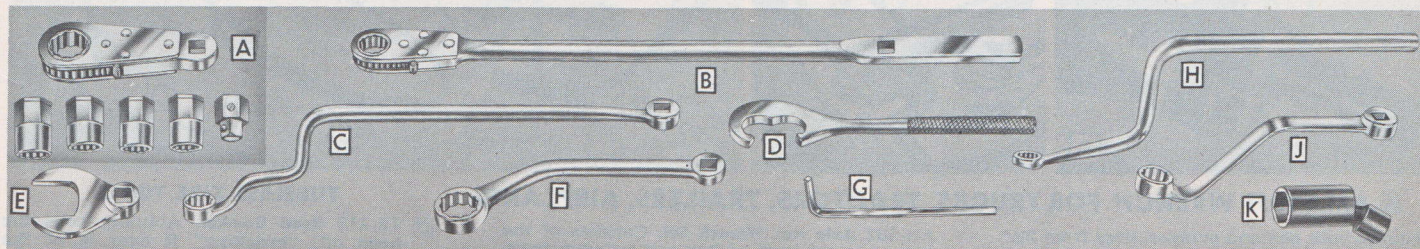
J B-1456A Brake Bleeder Boxocket. A single hex offset Boxocket with $\frac{3}{8}$ " and $\frac{1}{4}$ " openings for bleeding hydraulic brake systems found on GM and most other passenger cars. The single hex openings and 9" length combine to make this job easier and faster for the mechanic.

K B-1460B Brake Bleeder and Adjusting "Boxocket." For late model Chrysler products. Single hex offset wrench with $\frac{3}{8}$ " and $\frac{1}{4}$ " openings. The $\frac{3}{8}$ " end is for use in brake bleeding work and it will fit most passenger cars. The $\frac{1}{4}$ " end is used when adjusting brake shoe eccentric bolts. The offset on this end will clear drag link arm and recessed backing plate on front wheels still leaving room for the hand to fit between tire and wrench. Overall length is $9\frac{1}{2}$ " to provide plenty of leverage to break loose rusted bolts.

L B-1459 Brake Adj. Boxocket. For Bendix floating shoe-type brakes on late model Ramblers, Statesman and some other makes of cars. These brakes have an adjusting bolt with $\frac{3}{8}$ " square head. This wrench has two $\frac{3}{8}$ " single square openings—one at a 45° angle and the other straight with the handle. Tool length is $9\frac{1}{2}$ ".

M B-1458 Brake Bleeder Boxocket. A special offset "Boxocket" with $\frac{3}{8}$ " and $\frac{1}{4}$ " single hex openings. $\frac{1}{4}$ " size is needed for many late model cars. The wrench will handle most cars and light trucks. $9\frac{1}{2}$ " length and offset heads provide leverage and clearance from backing plate, brake lines, etc.

N B-1463 Brake Bleeder Wrench. Especially designed for smaller fittings on majority of GM, Ford and other new compacts. "L" shape provides leverage. The $\frac{1}{4}$ " single hex end is tapered to allow for clearance in removing bleeder screw. The $\frac{3}{8}$ " single hex end fits standard and some compact cars. Chrome finish.



CASTER-CAMBER, TOE-IN WRENCHES

A WA-306A Set of Caster-Camber Adjusting Tools. For servicing Chrysler and General Motors products. Consists of WA-28 Torque Adaptor Wrench, four special sockets, and adaptor to fit the WA-28, $\frac{7}{8}$ " hex opening.

WA-28 Torque Adaptor. 5" long with $\frac{1}{2}$ " square drive opening in handle and a $\frac{7}{8}$ " double hex reversible ratcheting Boxocket.

S-9834-20 Socket. $\frac{5}{8}$ " double hex opening for 1957-59 Chrysler products.

S-9834-22 Socket. $\frac{1}{16}$ " double hex opening for 1957-62 Chevy, 1959-62 Chrysler products, 1960-62 Buick.

S-9834-24 Socket. $\frac{3}{4}$ " double hex opening for 1958-60 Pontiacs.

S-9834-26 Socket. $\frac{1}{16}$ " double hex opening for late model Dodge, DeSoto and Chrysler.

A-3078B Adaptor. $\frac{7}{8}$ " hex to $\frac{1}{2}$ " square. Adapts the WA-28 to any $\frac{1}{2}$ " drive socket.

B S-9837 Torque Adaptor. For 1961-62 Buick Special and Olds F-85 caster-camber adjustments. $19\frac{3}{4}$ " long, $\frac{1}{16}$ " double hex opening. Use with a TQ-150 Torqometer. Set Torqometer dial at one-half desired torque for correct tension.

C S-9545 Torque Adaptor. For caster-camber adjustments on Chevy (except 1959) with 348 cu. in. engine. Also other Chevy 1955-62. $14\frac{1}{4}$ " long, $\frac{1}{16}$ " double hex opening and $\frac{1}{2}$ " square drive opening to take TQ-150 Torqometer. Set Torqometer dial at one-half desired torque for correct tension.

D WA-10 Tie Rod Adjusting Tool. For turning tie rod sleeve to adjust toe-in on most cars and light trucks. 9" long with 2-position jaw and double hook. Has knurled handle to provide a severe grip.

E Crowfoot Caster-Camber Wrenches. Heads only $\frac{1}{4}$ " thick. Have $\frac{1}{2}$ " square drive. The following five sizes are available.

S-8661A $1\frac{3}{16}$ " S-8272 $1\frac{1}{4}$ " S-8662A $1\frac{1}{16}$ "
S-8175 $1\frac{3}{8}$ " S-9156 $1\frac{3}{32}$ "

F S-8366 Torque Adaptor. For lower control arm attaching bolt on 1961 Nash and Rambler. $8\frac{3}{4}$ " long, $\frac{1}{16}$ " double hex opening. Use with a TQ-150 Torqometer. Set Torqometer dial at $\frac{2}{3}$ the desired torque.

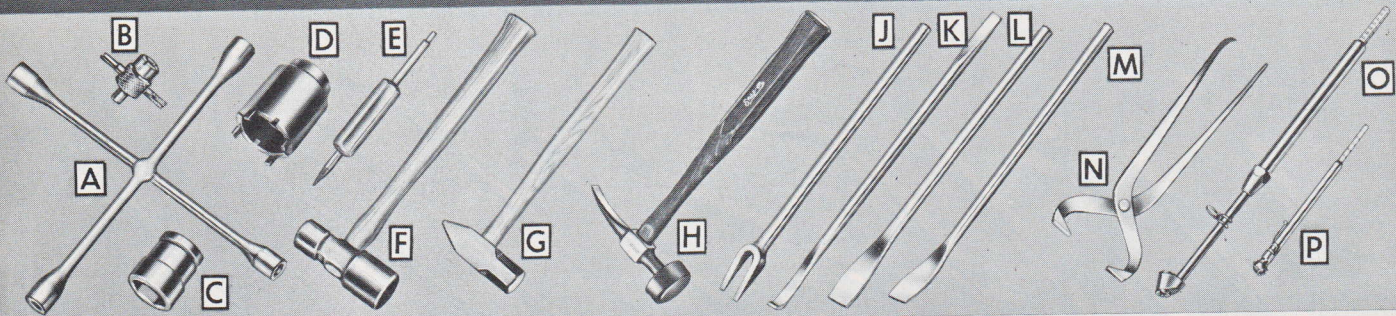
G AWL-8 Caster-Camber Adjustment Wrench. For the $\frac{1}{4}$ " hex head set screw adjustment on most GM cars. Hardened for long service. $5\frac{1}{4}$ " length to bend.

H S-6203 Wrench. For 1960-62 Chevy Corvair caster-camber adjusting. $10\frac{1}{2}$ " long, $\frac{9}{16}$ " double hex opening.

J S-8686A Caster-Camber Boxocket. $\frac{3}{4}$ " Double Hex. For 1957-62 Ford, 1957-58 Mercury and 1958 Edsel. Has double bend to provide clearance. Use with a TQ-150 "Torqometer." Set Torqometer dial at one-half of the desired torque.

K SIMB-280 $\frac{7}{8}$ " Ball-Type Flexocket. For cast-er camber adjustment on all 1961-62 Olds except the F-85. $31\frac{1}{16}$ " long with $\frac{1}{2}$ " square drive.

TIRE AND WHEEL SERVICE TOOLS



A ★**TR-105 Rim Wrench** Powerful, 4-arm speed tool for wheel removing. Socket ends have $1\frac{3}{16}$ ", $\frac{3}{4}$ ", $\frac{7}{8}$ " and $1\frac{1}{16}$ " hex openings, broached extra deep to operate over protruding hub bolts. The arms of this wrench are 10" long.

B ★**GA-143 Tire Valve Tool**. Here's a handy little tool for tire servicing. One end is for removing or inserting the valve core, one end for tapping out the valve core threads, one end for chasing the outside threads and one end which acts as an air nozzle. Threaded on the valve stem it holds the stem in position and an air hose can then be used to partially inflate the tube. This tool is $1\frac{3}{4}$ " long.

C **Budd Wheel Sockets**. Heavy wall construction for impact wrench use. All have a groove for locking ring and pin.

BW-483B Socket..... $1\frac{1}{2}$ " single hex, 1" sq. drive.

BW-626 Socket..... $1\frac{3}{16}$ " single square, $\frac{3}{4}$ " sq. drive.

BW-726A Socket..... $1\frac{3}{16}$ " single square, 1" sq. drive.

D **S-8695 Special Lug Socket**. For removing and replacing the front drive axle lock nuts on Ford and Chevy 4-wheel drive trucks. Socket is $\frac{1}{2}$ " square drive.

E **TR-104 Tire Valve Tool**, a compact, 2 in 1 tire valve tool useful in all tire repair work. One end of the shaft has a tapered left-hand thread for quick, easy removal of broken valve cores. The other end is slotted to fit all standard valve core tips for easy removal and replacement of valve core. Fluted plastic handle is $\frac{5}{8}$ " in diameter, 2" long, provides firm grip.

F **BH-38A Combination Tire Hammer**. Drop-forged steel head has a $1\frac{1}{2}$ " x 1" curvable hard-rubber tip is easily replaced. Provides 2 lbs. of impact. 24" long.

BH-123 Cross-peen Hammer. Excellent for the repair work since it has plenty of "beef" to handle heavy tires. Also can be used for many other jobs such as straightening frames, bumper brackets, bumpers, puller work, etc. Has flat face on one end—other end tapers to edge. Heads are black with polished faces. Hard wood handle. Weight, 3 lbs., 10 ounces.

H **TR-250 Wheel Cover Tool**. Has specially shaped pry end, curved to the proper radius to make wheel cover removal a fast, easy job on all makes and models of automobiles. The rubber boot on the hammer end helps prevent danger of damage, scratching, etc., to the cover when replacing. Boot is 2" diameter and is easily replaced when worn. Handle is 13" long, head $5\frac{7}{8}$ " long.

TR-250-2 Rubber Boot for above tool.

J **Tie Rod Separators**. These sturdy split wedge type tools are designed for separating tierods, ball joints, pitman arms, and knuckles on cars and trucks. Long handles put anvil end out in the open for hammer blows.

★**A-200 Separator**. $1\frac{3}{16}$ " jaw opening, $\frac{7}{8}$ " thickness. 18" long.

★**A-201 Separator**. 1" jaw opening, $1\frac{1}{16}$ " thickness. 12" long.

K ★**TR-100 Rim Tool**. Here's a tool that really does the job on split rims and rim lock rings used on older cars and practically all trucks. $19\frac{1}{8}$ " long, with ends $\frac{1}{16}$ " and $\frac{3}{8}$ " wide. One end is bent, the other straight.

L **TR-103 Straight Tire Removing Tool** for drop center tires. $1\frac{3}{8}$ " wide, 18" long. Well rounded, avoids injury to tire

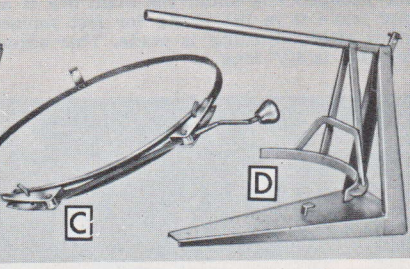
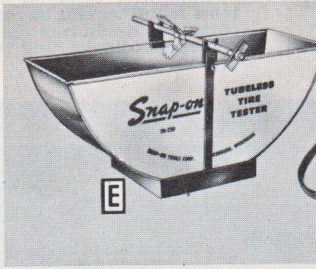
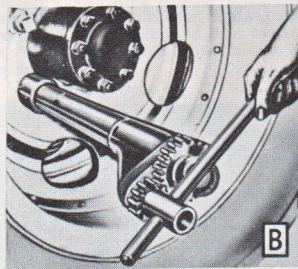
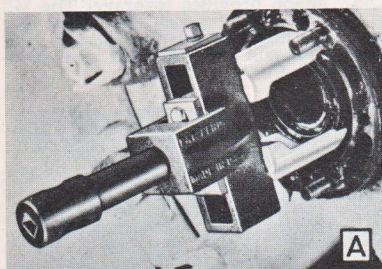
M **TR-102 Curved Tire Removing Tool** for drop center tires. $1\frac{3}{8}$ " wide, 18" long. Has plenty of purchase without danger of injuring tire.

N **GCP-10 Grease and Hub Cap Tool**. One handle has a bent edge that fits behind the hub cap to pry it loose. Tapered jaws of the tool fit behind the crimped ridge of the dust cap to provide a firm wedging grip that easily removes the tightest cap. The overall length is 10 $\frac{3}{4}$ ".

Tire Air Pressure Gauges Engineered and made to exacting standards. Equipped with 4 sided indicators to give maximum visibility and convenience. Two models are available.

O **GA-245 Truck Tire Gauge** calibrated in 2 pound increments up to 100 lbs. A rugged unit. Has a convenient ring for attaching to a chain or to hang gauge in handy location. 13" long.

P **GA-240 Pencil Gauge** for passenger cars and light trucks, calibrated in 1 pound increments up to 45 lbs. Has convenient pocket clip. Rounded head has a small button for depressing valve core. $5\frac{3}{4}$ " long.



A AXLE NUT WRENCH FOR TRUCKS, TRACTORS, TRAILERS, AIRPLANES

Handles both hex and octagon sizes from $2\frac{1}{4}$ " to $4\frac{7}{8}$ ". Forged jaws slide back and forth in malleable cast iron base. Screw, with opposite threads move jaws in constant relationship to each other, thus always center on axle nut. Two bolts lock jaws in position, jaws fit over opposite corners of nut only and work even if nut is badly battered.

The extension bar has a $\frac{3}{4}$ " male square drive to fit the base and a $\frac{1}{2}$ " female end to take a Speeder Handle. A cross hole receives the L-55B Bar handle for breaking loose or final setting of the bearing. Speeder and Bar Handle are not included in the set.

B POWERENCH FOR BUDD WHEELS MAKES TOUGH JOB EASY

GA-83 Powerench. A powerful geared wrench for mounting and removing Budd wheels on the road or in the shop. It's easy for one man to use, for once mounted on the work it supports itself leaving both hands free

GA-83-64 Adaptor. Used in hex drive of Powerench above for 3 to 1 power ratio on Budd Wheel inner cap nuts.

AN-102 Axle Nut Wrench Set. Consists of the base, one set each of hex and octagon jaws, an extra adjusting screw, and extension.

AN-100 Axle Nut Wrench—Hexagon

AN-101 Axle Nut Wrench—Octagon

AN-110 Pair Hex Jaws with Screw

AN-120 Pair Octagon Jaws with Screw

AN-9 Special Extension Bar

L-55B Bar Handle

K-4L $\frac{1}{2}$ " Square Drive Speeder

AN-103 Chevrolet, GMC Axle Nut Set, consisting of the base, the extension bar and one

AN-130 set of jaws, $2\frac{1}{4}$ " to 5" capacity.

AN-130 Pair of Chevy-GMC jaws with adjusting screws.

for the actual turning operation. An added safety feature against half-done jobs is provided in the unit as the outer hex nut cannot be tightened if the inner nut is still loose. Fits $1\frac{3}{16}$ " square and $\frac{1}{2}$ " hex nuts.

TUBELESS TIRE TOOLS

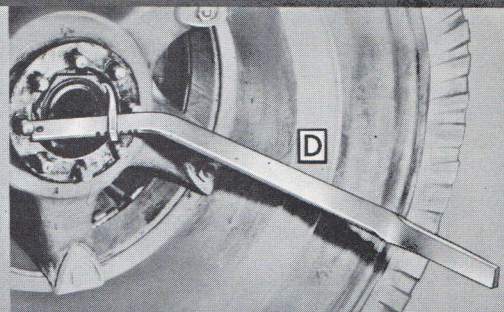
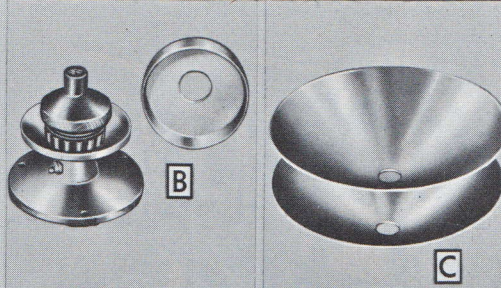
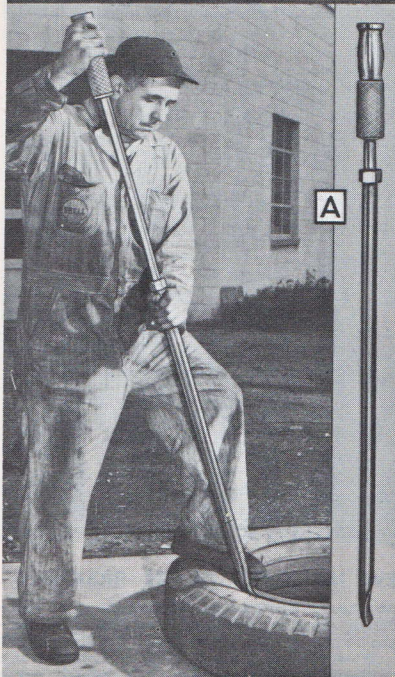
D **TR-210 Bead Breaker**. Actually rolls the bead off, "breaking" it over $\frac{1}{2}$ of the diameter of the wheel in one easy operation. Easy to use and there is no danger of damaging air seals as the wide circle shoe does not enter under the wheel flange. No adjusting—simply place wheel in position and push handle down. Automatic wheel stop adjusts itself for height and prevents wheel from slipping. For drop center 12" and 17 $\frac{1}{2}$ " wheels.

C **TR-220 Bead Expander**. Compresses the crown of the tire evenly by exerting equal pressure all around. This forces the beads outward against the rim flanges to assure an air-tight seal. Center portion remains stationary and guides the bead ends as the screw is tightened. The safe, 2-way screw action gives 1" movement in four turns of the handle. Adjustable to fit tubeless tires on all cars and most light trucks.

E **TR-230 Tubeless Tire Tester**. Wheel is mounted centrally in the aluminum tank on a quick operating universal chuck. The jaws adapt to hub hole diameters from $2\frac{3}{4}$ " to $4\frac{7}{8}$ " and handle all car and most light truck wheels. Turning cross bar tightens the chuck. With this unit you can make a thorough check for air leaks.

▲ Federal Specs: GGG-H-86A applies to the BH-123 Hammer.

TIRE AND WHEEL SERVICE TOOLS



A TR-200 Tire Bead Remover . . . for bus, truck, and tractor tires. Chisel edge is quickly positioned . . . hand hold prevents it from turning under hammer shock. Sliding hammer weighs 13 lbs., this weight plus momentum of blow delivers a shock force powerful enough to break loose even the largest tire bead.

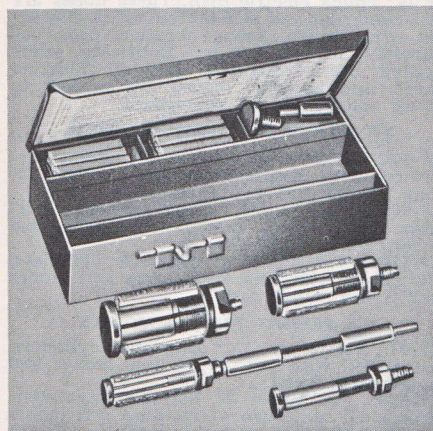
Safety . . . a 2" clearance between top of tube and the hammer eliminates danger of smashing fingers during the bead breaking operation.

Back-up feature . . . hammer shaft has a flanged bottom to prevent it from pulling out of the tube—this allows using the hammer to back the tool out should it get stuck between tire and rim. Length of stroke 16", overall length 46", weight 18 pounds.

B A-180A Wheel Bearing Packer with dust cover. Make repacking bearings a fast, easy and profitable operation. Retainer nut is double cone shape with $\frac{3}{4}$ " neck. Outside of nut is knurled for firm grip. The bore is coarse threaded to within $\frac{1}{2}$ " of end of nut. The $\frac{1}{2}$ " unthreaded section allows nut to seat itself on screw.

C A-180A-6 Set of Two Cone Shaped Adaptors. Adapts the above tool to grease even the large bearings on earth-moving equipment. Outside diameter is 8". The retainer nut holds the bearing and adaptors on the packing tool. Grease is forced in through the grease fitting and old grease is forced out.

D ★AN-115 Axle Nut Lock Bending Tool, designed for use on lock washers on truck rear axle nuts which are equipped with metal tabs to be bent over to lock nut in position. This is extremely difficult to do with ordinary tools, but this tool does the job quickly and easily. Consists of 23½" long handle and an adjustable hook-shaped link. Handle has one-quarter turn at one end while other end is curved and has 6 milled notches designed to take the link and allow adjustment for various size washers. Link is held on shaft by means of large head rivet at one end and bend of handle at other end.



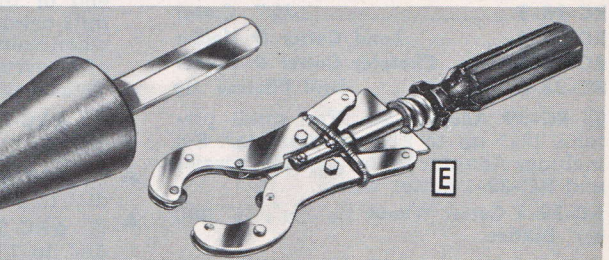
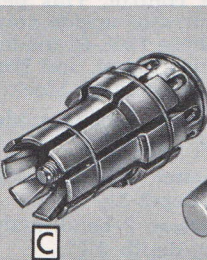
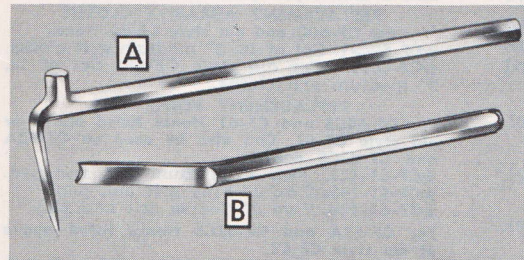
SMALL CYLINDER HONE SETS

Simple, sturdy construction makes this hone easy and inexpensive to operate yet assures long satisfactory service with perfect results. Seven sizes of bodies plus three sizes of blades combine to give a capacity of $\frac{1}{16}$ " to $\frac{25}{64}$ ". Abrasives, blades, and bodies are all interchangeable.

The flexible driving shaft provided is adaptable for use on $\frac{1}{4}$ " to $\frac{1}{2}$ " capacity drills and threads onto all sizes of bodies. Special abrasive cloth is mounted on a metal back for fast, easy changing and long service. Illustration shows the 925 set with a range of $\frac{3}{4}$ " to $1\frac{1}{8}$ " hone diameter.

Stock No.	Description	Set 925	Set 876-S	Set 876	Set 877	Set 878	Set 879	Set 880
876-SBD	$1\frac{1}{16}$ "- $\frac{3}{4}$ " Hone Body		1					
876B-D	$\frac{3}{4}$ "- $\frac{15}{16}$ " Hone Body	1		1				
876B-S	$\frac{15}{16}$ "- $1\frac{1}{16}$ " Hone Body	1		1				
877B	$1\frac{1}{8}$ "- $1\frac{1}{4}$ " Hone Body and Special 1" cup screw	1			1			
878B	$1\frac{1}{2}$ "- $1\frac{3}{4}$ " Hone Body	1				1		
879B	$1\frac{3}{4}$ "- $2\frac{1}{4}$ " Hone Body						1	
880B	$2\frac{1}{4}$ "- $2\frac{5}{8}$ " Hone Body							1
896-1	Small Blade	3	3	3	3	3	5	5
897-1	Medium Blade	3	3	3	3	3	5	5
898-1	Large Blade	3	3	3	3	3	5	5
919	Solid Driving Shaft	1						
920	Flexible Driving Shaft	1						
	Coarse Abrasives	18	3	9	9	9	15	15
	Fine Abrasives	9	3	3	3	3	5	5
	Special Metal Box	1						
	Cardboard Box		1	1	1	1	1	1

★899-C One dozen coarse abrasives for above Cylinder Hones.
★899-F One dozen fine abrasives for above Cylinder Hones.



A ★GA-84 Muffler-Tailpipe Tool. Removes mufflers and tailpipes quickly, easily and safely. Simply insert "scooped" drop forged blade between muffler nipple and tailpipe, drive tool in by tapping on $\frac{9}{16}$ " anvil which breaks bond—tap tool out and tailpipe can be removed. $\frac{1}{2}$ " octagonal alloy steel, $11\frac{3}{4}$ " long.

B ★GA-32 Muffler Tool. A husky, rugged tool designed to make fast work of cutting muffler sleeves, exhaust pipes and material of this type. Will take a lot of pounding and abuse and still cut these heavy materials. The head is set at an angle to afford knuckle clearance. The curved bit curls the cutting chip away from the operator to aid in safe operation. Overall length is 10", made of $\frac{1}{2}$ " octagon stock.

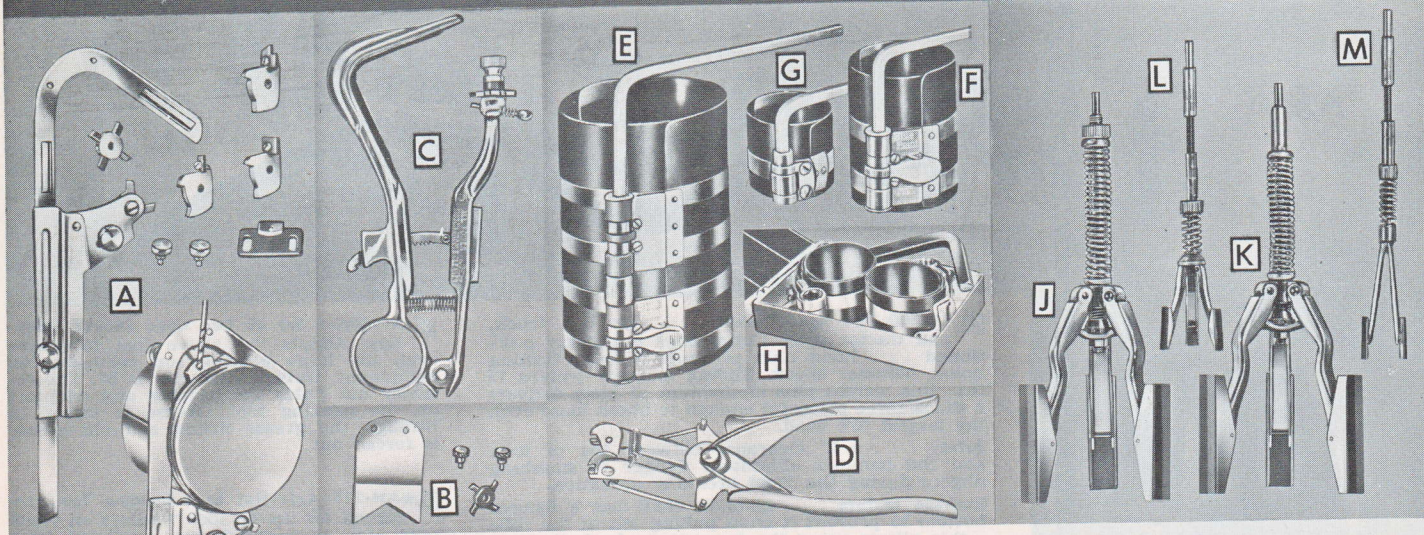
C TC-55 Tailpipe Expander. Designed for removing the indentations made by U-bolts when clamped securely on the tailpipe or muffler. These indentations must be removed when installing a new tailpipe or muffler on the old unit to permit one tube to fit over the other. The sectional body of the tool expands when the $\frac{5}{8}$ " hex nut is turned clockwise, forcing the body sections outwards with a great amount of pressure which also forces the indentations back into the circumference of the pipe. A few counter-clockwise turns of the hex screw reduces the circumference of the tool to allow immediate removal. Does job quickly, safely and easily with no hammering. Tool is 5" long, will handle tailpipes from $1\frac{1}{2}$ " to $2\frac{1}{2}$ ".

D TC-59 Round-Out Tool. Designed for expanding or "rounding-out" or reducing and reshaping tailpipes and other tubes so that one pipe fits snugly into the other. With point placed in tube, tube is flared out; with inside cone placed over tube, tube is reduced. Consists of cone shaped head and a hexagon handle which threads into the cone. Cone tapers from maximum O. D. of $2\frac{7}{8}$ " to a minimum of 1". I. D. at large end is $2\frac{5}{8}$ " which is more than adequate for any tailpipe. Two indentations at tip allow a wrench or pliers to be used to free tool in the event it becomes wedged when correcting flare-out. Overall length of cone is $5\frac{1}{2}$ ", overall length of tool with handle is 10". Saves your time and makes the job more profitable.

E TC-50A Adjustable Tailpipe Cutter. Fully adjustable to handle pipe from $1\frac{1}{2}$ " to $2\frac{1}{2}$ ". Simple to use, does excellent cutting job and can be used in restricted places. Four cutting wheels are riveted to the two circular shaped arms and spaced to give best results. Arms are mounted on threaded shaft which has a screw driver type handle to give firm, comfortable grip. Arms or jaws are opened and closed by turning handle. Complete instructions are packed with each tool.

★TC-50-1 Replacement Cutter Wheel & Pin Set.

PISTON AND CYLINDER SERVICE TOOLS



A PISTON RECONDITIONING SET

RC-38BK Piston Reconditioning Set. Here is a tool that will help you handle those ring jobs quickly and accurately. The set contains all units listed below and handles all pistons up to 5" diameter and grooves $\frac{5}{64}$ " to $\frac{1}{4}$ ". Attachments include a Chamfer Cutter for cutting 45° chamfer on the bottom edge of the oil ring groove, a Drill Jig for piloting a $\frac{3}{32}$ " drill so that an oil relief hole can be drilled at exactly the right angle and a Land Cutter to reduce swelled lands on aluminum pistons.

The chamferer and land reducer are used in place of the cutter wheel . . . the drill jig is mounted on the curve of the arm as illustrated above. Uniform tension and non-chatter cutting action is maintained by a compensating spring on the tilting cutter arm.

RC-38B Ring Groove Cleaner, with RC-38-1 Cutter and RC-38-2 Cutter only.

RC-38-1 Cutter Wheel, $\frac{3}{32}$ ", $\frac{1}{8}$ ", $\frac{5}{32}$ " and $\frac{3}{16}$ " blades.

RC-38-2 Cutter Wheel, $\frac{5}{64}$ ", $\frac{3}{16}$ ", $\frac{5}{32}$ " and $\frac{3}{16}$ " blades.

RC-38-3 $\frac{1}{4}$ " Cutter

RC-38-4 Land Cutter & Holder

RC-38-5 Chamfer Cutter & Holder

RC-38-6 Drill Piloting Jig

B RC-39 Adaptor Set. For small pistons, $1\frac{1}{4}$ " up to $2\frac{1}{2}$ " in diameter. Set includes Adaptor Plate, 2 special screws and RC-39-1 cutter wheel.

RC-39-1 Cutter Wheel, $\frac{1}{16}$ ", $\frac{3}{32}$ ", $\frac{1}{8}$ " and $\frac{5}{32}$ " blades.

C RING GROOVE CLEANING TOOL

RC-500 Ring Groove Cleaning Tool. Quickly removes the hardest carbon deposit out of ring grooves without injury to the piston. Will service all pistons with $\frac{5}{64}$ " $\frac{3}{32}$ ", $\frac{1}{8}$ " or $\frac{3}{16}$ " ring grooves. Hook-shaped ends work on all pistons from $2\frac{1}{2}$ " to 5". Flange in the hook fits into groove and holds piston securely yet allows it to turn freely. Cutter blade quickly changed. Self aligning feature prevents cutting into groove walls. Threaded guide is for use on Chrysler products and other pistons. Jaws may be locked and released by pressure on control bar.

RC-500-1 Replacement Cutter Blade.

RC-500-11 Cutter Blade for $\frac{1}{4}$ " and $\frac{5}{16}$ " Grooves.

D PISTON RING SPREADER

★PRS-7A Piston Ring Spreader. Here is a tool for easy installation of piston rings up to $\frac{15}{64}$ " thick. Insures minimum breakage and distortion. Protects hands. Simply slip the ring opening between jaws of the tool and squeeze. The first pressure operates clamping jaws which grip ends of ring securely. Further pressure expands the ring so that it slips over the piston. Handles return to open position when pressure is released.

PISTON RING COMPRESSORS

Ratchet control holds the tension bands in position as the piston is inserted into the cylinder. "V" beads on the lower edge of the belt keep the tool from entering the cylinder. $\frac{1}{2}$ " wide spring steel bands equalize the tension over the width of the belt, so that the ring assembly, no matter how stiff, may be compressed into the grooves until flush with the piston.

The RC-40B is constructed so that the hex wrench may be inserted into either end of the ratchet control. This permits using the compressor upside down when working on those 1958-62 models of Chevrolet, Mercury, Edsel, and Ford Trucks which use the angled block.

E ★RC-150 Compressor. 4-band model. $3\frac{1}{2}$ " to 7" capacity, depth $6\frac{1}{2}$ ".

▲ F ★RC-40B Compressor. 2-band model. $2\frac{1}{8}$ " to 5" capacity, depth $3\frac{1}{2}$ ".

▲ F ★RC-50B Compressor. 2-band model. $3\frac{1}{2}$ " to 7" capacity, depth $3\frac{1}{2}$ ".

G ★RC-30 Compressor. 1-band model. $1\frac{1}{2}$ " to 3" capacity, depth 2". Does not have ratchet action.

★RC-55 Compressor. 1-band model. $2\frac{1}{2}$ " to 5" capacity, depth 1". Shown on page 78.

OUTBOARD RING COMPRESSOR SET

As piston is inserted into the motor head, the compressor is forced off the piston and around the connecting rod—a release catch opens it for removal. Fits pistons from 1" to $3\frac{1}{2}$ ". Especially useful on bore-in-head Johnson, Evinrude and Gale models.

H ★RC-3500 Set. Two compressors and wrench in plastic case.

★RC-35 Ring Compressor and wrench.

NEW IMPROVED GLAZE BREAKERS

These new, improved Deglazing and Resurfacing Hones are designed for fast, accurate honing of cylinders in diameters from 2" to 7". A spread limiter limits hone diameter for general work or expands hone for large diameter cylinders . . . permits fast cylinder to cylinder change. The spring action gives the right pressure for positive glaze breaking using high or low speed $\frac{1}{4}$ " or $\frac{1}{2}$ " chuck electric drill. These hones are self-centering and self-bottoming. A powerful arm design keeps abrasive pads accurately in line. Note: Lubricate while honing, use kerosene or light oil. Flexible shafts and abrasive stones are subject to abuse and cannot be guaranteed.

J ADJUSTABLE TENSION MODELS

CF-60C For 2" to $5\frac{1}{4}$ " diam. cylinders. Furnished with eighteen abrasive cloths, 3" long. Cloths are easily changed.

CF-60CS. For 2" to $5\frac{1}{4}$ " diam. cylinders. Furnished with two 3" medium grit stones and a felt wiper pad.

CF-62CS. For 2" to 7" diameter cylinders. Furnished with two 4" medium grit stones and a felt wiper pad.

K PRESENT TENSION MODELS

CF-61. For 2" to $5\frac{1}{4}$ " diam. cylinders. Furnished with two 3" medium stones and a felt wiper pad.

CF-62A. For 2" to 7" diameter cylinders. Furnished with two 4" medium grit stones and a felt wiper pad.

REPLACEMENT ABRASIVE CLOTHS

For CF-60C and old style CF-60 Hones

★CF-60C-1. Set of 18, 3" medium grit cloths.

★CF-60-1. (For old style CF-60) Set of 18, 2" medium grit cloths.

REPLACEMENT STONE SETS

For CF-60CS and CF-61 Hones listed above or old style CF-62. Can also be used on CF-62A and CF-62CS above.

★CF-61-12S. Two 3" Medium grit and pad.

★CF-61-14S. Two 3" Fine grit and pad.

★CF-61-100. Two 3" Coarse grit and pad.

For CF-62A and CF-62CS Hones listed above or old style CF-62.

★CF-62-12S. Two 4" Medium grit and pad.

★CF-62-14S. Two 4" Fine grit and pad.

For old style CF-60S Hone

★CF-60S-12. Two 3" Medium grit and pad.

★CF-60S-14. Two 3" Fine grit and pad.

SMALL CYLINDER HONES

For brake cylinder work and small engines such as Volkswagen, etc. Lubricate while honing—brake fluid is satisfactory.

L CF-63. For $\frac{3}{4}$ " to $2\frac{1}{2}$ " diam. cylinders. Furnished with 3 medium grit stones, each $\frac{3}{16}$ " x $1\frac{1}{8}$ " long.

★CF-63-1. Set of 3 medium grit stones for CF-63, each $1\frac{1}{4}$ " long.

★CF-63-14. Set of 3 fine grit stones for CF-63, each $1\frac{1}{4}$ " long.

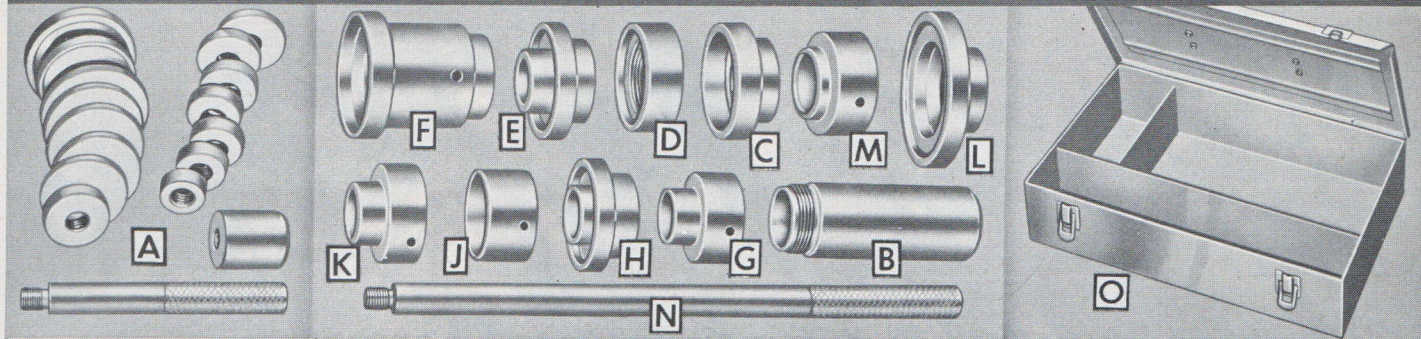
★CF-63-2. Set of 3 medium grit stones for CF-63, 2" long.

M CF-64. A 2-arm hone for $\frac{1}{2}$ " to 2" diam. cylinders. Furnished with 2 medium grit stones, each $1\frac{1}{4}$ " long.

★CF-64-1. 2 medium grit stones for CF-64.

★CF-64-14. 2 fine grit stones for CF-64.

WHEEL SEAL DRIVER SET . . . OIL SEAL DRIVER SET



WHEEL SEAL DRIVER SET

Here is a set of drivers and pilot plates needed for replacing wheel seals on all cars. Provides fast and easy method of assembling the necessary combinations—replace wheel seals without damage. Consists of 8 pilot plates, 7 driver plates, pilot and solid handle. The various units fit both front and rear seals. In use, the proper size driver plate is placed in position on the handle, then the proper pilot plate is threaded on to the handle to hold the driver plate snugly in place. This provides a solid assembly which is easy to use with no danger of driver plate or pilot plate pulling off during operation. The handle is specially heat treated to assure long service. A chart furnished with each set shows proper combinations of parts to be used on various cars.

A-1417 Complete Wheel Seal Driver Set made up of following parts: (Can be housed in KRA-123 Metal Box.)

Stock No.	Description	Stock No.	Description
A-14-1	7 $\frac{1}{8}$ " Solid Handle	A-14P-40	Pilot Plate 1 $\frac{1}{4}$ " Dia.
A-14-6	Pilot 1 $\frac{5}{8}$ " Dia. x 1 $\frac{3}{4}$ "	A-14P-44	Pilot Plate 1 $\frac{3}{8}$ " Dia.
A-14-7	Driver Plate 2 $\frac{5}{8}$ " Dia.	A-14P-46	Pilot Plate 1 $\frac{7}{16}$ " Dia.
A-14-16	Driver Plate 2 $\frac{1}{2}$ " Dia.	A-14P-48	Pilot Plate 1 $\frac{1}{2}$ " Dia.
A-14D-76	Driver Plate 2 $\frac{3}{8}$ " Dia.	A-14P-50	Pilot Plate 1 $\frac{9}{16}$ " Dia.
A-14D-78	Driver Plate 2 $\frac{7}{16}$ " Dia.	A-14P-54	Pilot Plate 1 $\frac{11}{16}$ " Dia.
A-14D-84	Driver Plate 2 $\frac{9}{8}$ " Dia.	A-14P-58	Pilot Plate 1 $\frac{13}{16}$ " Dia.
A-14D-86	Driver Plate 2 $\frac{11}{16}$ " Dia.	A-14P-60	Pilot Plate 1 $\frac{7}{8}$ " Dia.
A-14D-94	Driver Plate 2 $\frac{5}{16}$ " Dia.		

OIL SEAL DRIVER SET

A complete pinion Oil Seal Driver Set consisting of the necessary driver heads and plates for replacing pinion and transmission oil seals on all cars. Units included will fit pinion seals as well as both automatic and standard transmission oil seals. They allow a sure and quick way of installation without possibility of marring or damaging the seal. A chart furnished with each set shows proper combination of parts to be used. The KRA-123 Metal Box is 16 $\frac{3}{8}$ " x 9 $\frac{1}{2}$ " x 3 $\frac{3}{4}$ ", has three compartments. Finished in red enamel with a comfortable chrome plated handle and clip fasteners.

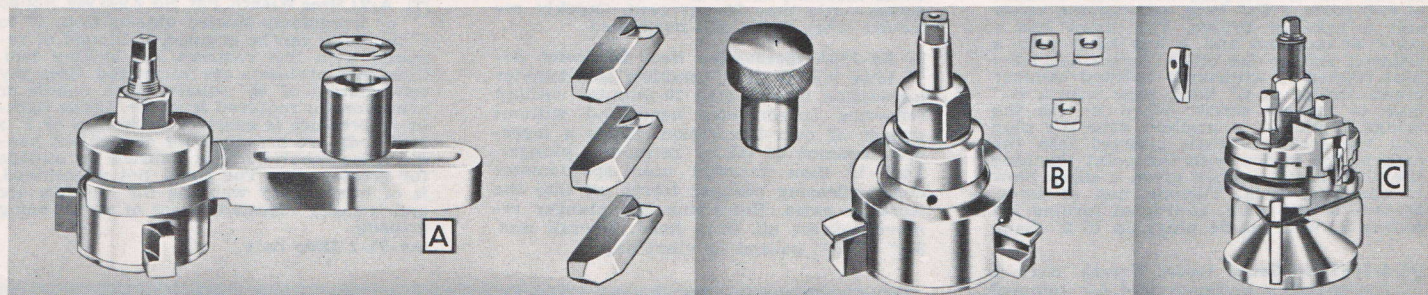
A-1412-B Oil Seal Driver Set made up of parts listed below in KRA-123 Metal Box.

A-1412 Set. Above set without metal box.

Stock No.	Description	Stock No.	Description
B-A-14-2	5" Hollow Handle	H-A-14-10	Driver Head 3" Dia. x 1 $\frac{1}{2}$ "
C-A-14-3	Driver Head 3 $\frac{1}{8}$ " Dia. x 1 $\frac{1}{4}$ "	J-A-14-12	Driver Head 2 $\frac{7}{16}$ " Dia. x 1 $\frac{3}{8}$ "
D-A-14-4	Driver Head 2 $\frac{7}{8}$ " Dia. x 1"	K-A-14-13	Driver Head 2 $\frac{5}{8}$ " Dia. x 1 $\frac{3}{4}$ "
E-A-14-5	Driver Head 3 $\frac{1}{8}$ " Dia. x 1 $\frac{5}{8}$ "	L-A-14-14A	Driver Head 4 $\frac{1}{8}$ " Dia. x 1 $\frac{3}{8}$ "
F-A-14-8	Driver Head 3 $\frac{3}{8}$ " Dia. x 1 $\frac{1}{2}$ "	M-A-14-15	Driver Head 2 $\frac{3}{4}$ " Dia. x 1 $\frac{3}{8}$ "
G-A-14-9	Driver Head 2 $\frac{7}{16}$ " Dia. x 1 $\frac{3}{4}$ "	N-S-8673-2	Long Driver

A-1429-B Combination Set made up of A-1412 listed above and A-1417 set listed opposite, in KRA-123 Metal Box.

KRA-123 Metal Box, 16 $\frac{3}{8}$ " x 9 $\frac{1}{2}$ ", red enamel finish.



A FOR CARS AND TRUCKS

2-9/16" to 6" Capacity With the Extra Set of Cutter Blades

WR-25 Ridge Reamer. An expanding cutter type reamer with two sets of blades giving a capacity of 2 $\frac{9}{16}$ " to 4 $\frac{1}{8}$ ".

Three expanding cutters act as self-centering agents and are so shaped that only the top portion of the blade does the actual cutting while the bottom section acts as a guide to prevent chattering and undercutting. The reamer is supported in the cylinder by means of the clamp which is slipped over a stud and bolted to the cylinder block. Blades are adjusted by means of the square head screw on top of the tool and the reamer is turned by means of the large hex on top of the housing. Two sizes of cutter blades are furnished with the set to handle cylinders up to 4 $\frac{1}{8}$ ", however an extra set of blades is available to increase the capacity to 6". Complete with wood case.

WR-26 Ridge Reamer. Above tool with three sets of blades giving a capacity of 2 $\frac{9}{16}$ " to 6". Complete with wood case.

Replacement Blades

- ★WR-25-3 Set of three blades 3 $\frac{3}{4}$ "-4 $\frac{1}{8}$ "
- ★WR-25-4 Set of three blades 2 $\frac{9}{16}$ "-3 $\frac{3}{4}$ "
- ★WR-25-5 Set of three blades 4 $\frac{1}{8}$ "-6"

B FOR TRUCKS OR DIESELS

4 $\frac{7}{8}$ " to 8" Capacity With the Extra Set of Cutter Blades

WR-20 Ridge Reamer. A large expanding cutter type reamer with one set of blades giving a capacity of 4 $\frac{7}{8}$ " to 6 $\frac{1}{16}$ ".

The blades have cutting edges on the top part only . . . bottom part acts as a pilot to prevent undercutting. Strips on top of the blades ride on top of the block and prevent the tool from falling through. Amount of cut is regulated by turning the 1 $\frac{1}{2}$ " square on the center screw. Once the reamer is set, the knurled operating knob slips over the screw and acts as a convenient grip to hold the tool while it is being turned with a 1 $\frac{1}{2}$ " wrench. For ridges deeper than 7/16" a set of filler strips is included. Blades have a capacity of 6 $\frac{1}{16}$ ", a set of longer blades increasing the capacity to 8" is available. Complete with wood case.

WR-21 Ridge Reamer. Above tool with two sets of blades giving a capacity of 4 $\frac{7}{8}$ " to 8". Complete with wood case.

Replacement Blades and Parts

- ★WR-20-4 Set of 3 blades and strips, 4 $\frac{7}{8}$ "-6 $\frac{1}{16}$ " capacity.
- ★WR-20-5 Set of 3 blades and strips, 6 $\frac{1}{16}$ "-8" capacity.
- WR-20-6 Set of filler strips and screws (State blade number the strips are for).

C FOR NEW ANGLE BLOCK ENGINES

3" to 5" Capacity

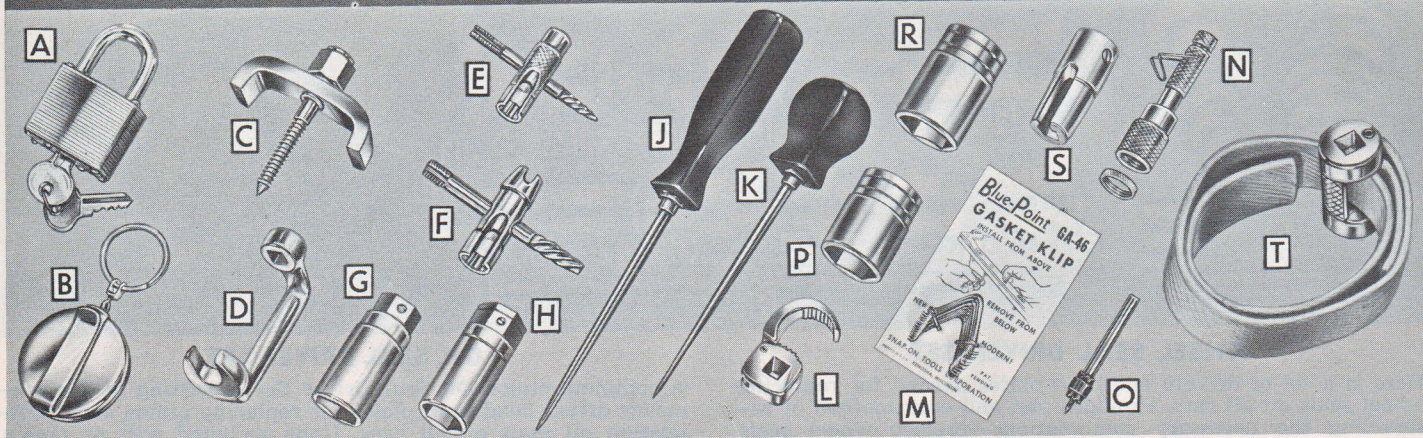
WR-30 Ridge Reamer designed to work equally well on both the new angle block engines as well as those with straight blocks.

Of multiple piece, die cast construction, this unit consists of two main assemblies and a threaded feed screw. The bottom assembly consists of a cone shaped base with 3 milled slots, three jaws (which fit into the slots), and a plate located on top of the jaws. The jaws are notched and are encircled by a spring, which applies tension on the jaws to keep them aligned during use. The top assembly consists of a feed plate, a carbide cutter which is attached to a cutter carrier, cutter locator button, cutter eccentric, driver nut and a cutter carrier locking screw. The feed screw threads through the center of both assemblies and has very fine threads for accurate adjustment.

The tool is designed so that it automatically centers itself in the cylinder. An impact wrench may be used in conjunction with the unit on extreme cases, however, a deep 13/16" socket and handle plus a 3/8" open end wrench or "Boxocket" is all that is needed in most instances. Complete instructions are packed with each tool.

★WR-30-1 Replacement Cutter Bit.

MISCELLANEOUS SPECIAL SERVICE TOOLS



A "Master" Padlocks, one of the strongest, finest padlocks made, cannot jar open. Brass cylinder, nickel-silver pin tumbler, brass locking lever.

ML-1 Master Lock 1 3/4" steel case. Chrome-nickel steel tapered shackle hardened to resist file, saw or cutter; diameter 5/16", vertical clearance 1 3/16", our best padlock.

ML-3 Master Lock 1 1/2" steel case. Chrome-nickel steel shackle hardened to resist file, saw or cutter; diameter 5/16", vertical clearance 5/8". A dependable high grade padlock.

ML-7 Master Lock 1 1/4" steel case. Manganese steel shackle, diameter 3/16". Vertical clearance 5/16". Smaller than the others but sturdy built for dependable service.

B ★GA-155A Key-Bac. Helps prevent key loss. Case holds retrieving spring, 2' of chain, clips onto belt or pocket. The large split ring holds many keys.

C CG-25 Freeze Plug Puller. A necessary tool for safely removing expansion or frost plugs quickly and easily from car and truck engines without danger of damage to the rim of the plug hole. Unit consists of two parts, a 2 1/4" long, self-tapping screw and a yoke or bridge. The screw has a point at one end and a hex head with a relieved end at the other. Screw has been heat treated to withstand repeated hammer blows. Bridge is 1/4" thick steel with a 5/16" hole to receive screw. When in use the bridge is placed in position over the plug and the screw is then inserted into the hole in the bridge with the point touching the plug. Screw is then given a sharp blow to penetrate plug. Turning hex of screw threads it into plug, additional turning removes it. Will handle plugs up to 2" diam.

D S-8659 Oil Gauge Sender Wrench. Here is the specially designed tool for removal of oil gauge senders found on 1956 Plymouths, most GM and Chrysler products, 1957 and earlier Ford products. Works excellently in the limited space between engine and frame. Of one piece construction—has offset on each end which allows tool to clear diaphragm top and reach the 5/16" hex nut. Handle end has 3/4" square opening for 3/4" square drive handles. Overall length is 3", satin chrome finish.

E ★GA-22A Midget Grease Fitting Tool. Services so called "Midget" grease fittings.

F ★GA-22 Standard Grease Fitting Tool. Used to remove old fittings, rethread the holes and replace new fittings... fits standard size Zerk and Alemite grease fittings.

G S-9704B Spark Plug Socket. 1 3/16" (20.6 mm.) single hex socket fitted with a rubber insert to protect the plug. Rubber insert center hole grasps the knurl on the spark plug and centers it in the socket. Ribbed exterior holds the insert tightly in the socket. 3/4" square drive and 3/4" milled hex.

★S-9704A-2 Rubber Insert only. Fits both the S-9704B and S-9705 sockets.

H S-9705 Spark Plug Socket. 1 3/16" (20.6 mm.) Single hex socket. Same as the S-9704B above, but has 1/2" square drive and 7/8" milled hex.

J 5ASA Scratch Awl. This is a high quality, alloy steel blade machined and ground from 1/4" diameter to a perfect taper, and hardened the full length. Handle is the same high grade "Octo-Grip" plastic handle used on our best screwdrivers. Metal ferrule on the blade prevents pressure from pushing blade through the handle. Overall length 8 1/2".

K 6ASA Scratch Awl. Similar to 5ASA above except that it has a stubby plastic handle that fits comfortably in the palm of your hand. Overall length, 6 1/2".

L A-167 Ratcheting Spanner. An excellent tool for turning undersized or worn nuts or fittings. Especially useful on stop light switches on Ford and Chevrolet and for turning speedometer cable nuts. Tool is of one piece construction, consists of a toothed, curved jaw and spring mounted, rectangular shaped body. Operates on wedge principle, automatic ratcheting action takes place and serrated inside edges of both parts bite onto nut, will not slip. Has 3/8" square drive handle opening.

M ★GA-46 Gasket Clips. Set of twelve spring steel clips. Hold gasket firmly in place while assembly is being made. Protects the gasket—cuts time 50 per cent. Quickly removed when bolts are positioned.

N GA-140A Speedometer Head Lubricator. Allows you to do a complete speedometer lubrication in less than 10 minutes without removing speedometer head and without danger of over-lubrication. Holds a measured amount of oil by retracting plunger. Tool is then screwed onto speedometer head, releasing plunger forces oil into the working parts. Retracting the plunger removes excess oil from head. Overall size, 3 3/4" x 1 1/4", packed in vinyl bag.

O ★GA-153 Spot Weld Cutter. Cuts 5/16" dia. spot weld on all types of sheet metal, fast and clean. Used with electric drill, tool cuts through one layer of metal, removing spot weld and separating the two metal sheets. 2 1/4" long, 1/4" shaft. Cutter blade reversible to double tool life. Replacement blades available.

★GA-153-1 Replacement Blade.

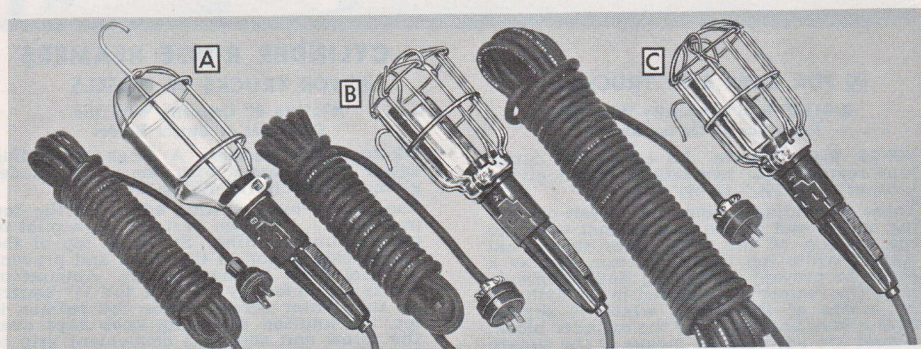
P A-118 Stop-Light Switch Socket. 1" Hex socket, 3/8" drive for removal and replacement of stop-light switch. Clears wire terminal on end of switch. 1 3/4" long, bolt clearance depth 1 1/8", O. D. 1 3/16", Chrome finish.

R A-119 Oil Pressure Sender Socket. 1 1/16" single hex, 3/8" square drive for use on all makes of cars with electric oil sender switches, especially GM. Provides greater wall contact, also useful on brass and other soft metal hex fittings. 2" long. Bolt clearance depth 1 3/8", O. D. 1 3/8", Chrome plated.

S N-36 Zerk Grease Fitting Socket. This is a 7/16" single hex socket with a slot machined out of the side wall. It is a time saver when replacing angle grease fittings. 1 3/16" long. Fits 1/2" square drive handles.

T A-91 Strap Wrench. Pat. No. 2,995,965. Round or irregularly shaped objects from 1" to 6" diameter can be gripped, tightened or released with this compact self-locking tool. Clearance problems are minimized. Uses any combination of 3/8" square drive handle or extension for required leverage. Locks tighter as pressure is exerted. Both ends of 1" x 2 1/4" body are broached for convenient handle attachment, body is knurled on outside for greater grip. The strap, not guaranteed, is of heavy duty webbing for long service and is easily adjusted to size of object being gripped.

★A-91-2 Strap only.



STANDARD AND DELUXE EXTENSION LIGHTS

Designed to provide plenty of convenience and rugged service. Carry Underwriter's Approval. Grease resistant, easy-to-grip vinyl handles have double-swipe positive contact tool-tip outlets on both sides. Easy-to-use button switch is not recessed. Guards have convenient hook for hanging light.

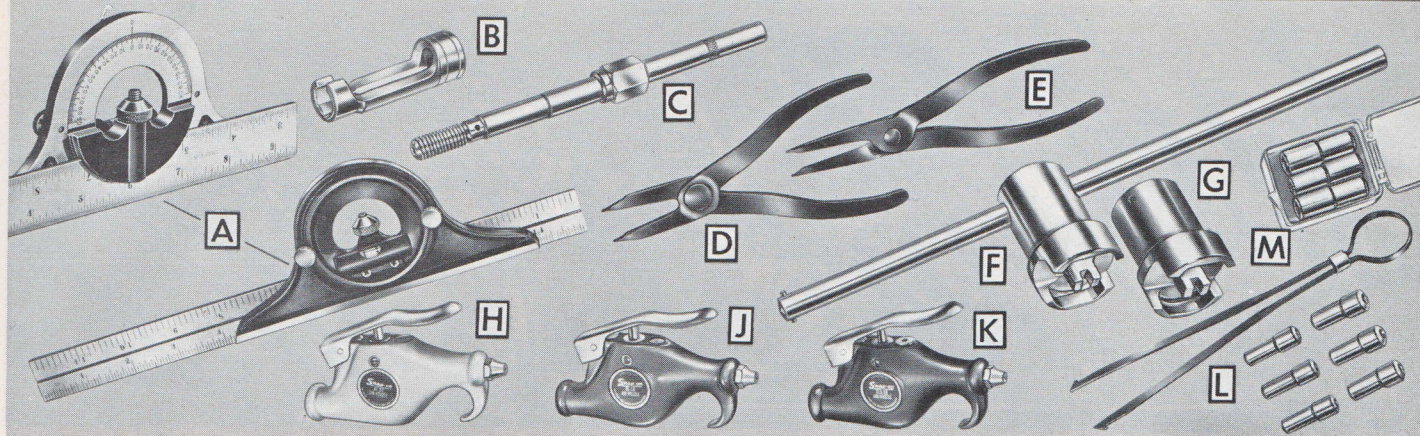
A EC-338 Standard 25 foot Extension Light. Rubber covered, 18 gauge flexible cable. Swing-open guard permits fast and easy bulb replacement.

B EC-378 Heavy Duty Deluxe 25 foot Extension Light. Neoprene covered 16 gauge flexible cable. Easy end-opening guard. Heavy duty, armored cable-grip plug has spring action blades for positive contact.

C EC-379. Same as EC-378 but with 50 foot cord.

EC-629 50 foot Extension Cord 12 gauge .55 O. D. "S" type flexible cable, 3 conductor, with heavy duty armored grip male and female grounding type rubber connectors.

MISCELLANEOUS SPECIAL SERVICE TOOLS



A GA-182 Protractor-Level with 12" scale. Measures the drive shaft angle, engine angle, pinion shaft angle and has numerous applications on air ride suspension system, torsion bars, etc. Highly accurate, revolving turret protractor attached to an adjustable sliding 12" rule graduated in 8ths, 16ths, 32nds and 64ths. Turret graduated to 90° on either side of 0. A bubble level is attached to side of turret, easily replaceable. Turret base is 7" long. Rugged and highly accurate, will withstand hard usage.

B M-3503 Diesel Fuel Injector Socket. For use when working on the injector fuel lines of Detroit Diesel engines. The socket fits 1/2" square drive handles or Torquometers. The wrench opening is 1/2" single hex with a 3/32" wall opening to slip over the fuel line. The socket is cut away to provide for the exit of the line. Overall length is 3 1/4".

C GA-176 Oil Punch. A simple, easy way to open sludge clogged initial oil channel leading to head bolt for clear oil flow to rocker arms without dismantling the engine. Screw unit into head bolt place, fill with oil, insert plunger into Oil Punch, apply blow with hammer to top of Plunger and a reverse flow of oil blows the channel and related passages clean. A simple way of stopping noisy valves and rocker arms.

Retaining Ring Pliers. For the positive and easy way to remove or install retaining rings over shafts or in a bore. Made of high grade steel, heat treated for strength and hardness. Standard black finish.

D Internal Ring Pliers for compressing ring for insertion into a bore or housing.
PRS-21 Internal Ring Plier 5 1/4" long.
PRS-23 Internal Ring Plier 6 1/4" long.
PRS-25 Internal Ring Plier 8 3/4" long.

E External Ring Pliers for expanding ring to fit over shaft.
PRS-22 External Ring Plier 5 1/4" long.
PRS-24 External Ring Plier 6 1/4" long.
PRS-26 External Ring Plier 9 1/4" long.

Bung Remover Tools. Will turn virtually all screw-in bungs used on oil drums, containers for chemicals, solvents, etc. Save time, eliminate damage to bung or drum and avoid skinned knuckles you get with makeshift tools. Socket fits around the outside of small bungs, the inside of large bungs, enabling the specially shaped housing or spring-loaded tongue to grip the bung.

F A-172NS Spark Resistant Bung Socket complete with sliding bar handle, entire unit made of Ampco metal which is highly spark resistant. Also has 1/2" square drive in handle end of socket.

G A-172 Standard Bung Socket for use with 1/2" square drive Ratchet or impact wrench. Steel construction, black finish.

Snap-on Air Nozzles are safe, economical and convenient. Light in weight and made of high impact plastic provide trouble-free service. The safety valve meters the air flow and safe among mechanics. Comfortable to use and convenient handling.

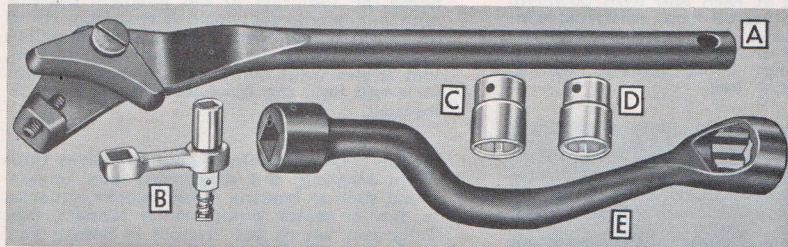
H AL-50. Output at 100 lbs., line pressure is 50 P.S.I. Has yellow plastic body.

J AL-50. Output at 100 lbs., line pressure is 50 P.S.I. Has red plastic body.

K ALS-50 Safety Air Nozzle. Output at 100 lbs., line pressure is 50 P.S.I. Automatically shuts off the flow of air if back-pressure is encountered at tip. Has green plastic body.

L CF-83 Head Alignment Dowel Set. For fast accurate placement of head gaskets and cylinder heads. Just drop the dowels in place, lay gasket over them and set the head in place without danger of deforming the gasket or need to slide the head or gasket back into place. Then start head bolts in other holes. Finally, use the retriever to pull the dowels and start the remaining bolts. Set should be used whenever fast drying sealants are used on the head gasket. Set consists of retriever, three 1/16" bolt dowels and three 1/2" bolt dowels.

M CF-83-4 Dowel Set. Three 1/16" dowels for use with CF-83 above on Mercury and GM products and most trucks. Dowels are 1 1/2" long.



SPECIAL TOOLS FOR CUMMINS DIESEL

A M-1306 Engine Turning Tool. Needed to turn the engine over when adjusting valves and injectors, timing and many other adjustment operations. Turns the auxiliary pulley without causing damage to it.

B M-1302 Torque Adaptor. For loosening lock nuts, adjusting valves and injectors and for final torquing of these units to the manufacturer's specifications. Use with our F-40A Handle, TQ-150 "Torqometer", TB-12B "Torqometer" and with our SW-261, SW-281 and SW-301 sockets. Truly a necessary tool for efficient, time-saving operations, this adaptor enables you to achieve great accuracy in these tensioning and torquing operations.

Injection Cup Sockets. For the removing and installing of injection cups

on Cummins Diesel engines. Each socket has six equally spaced shallow splines which slip over the splines on the injection cup to provide fast, safe and easy turning power. Sockets have 1/2" square drive.

C M-1303 for 1" injection cup

D M-1304 for 3/4" injection cup

E M-1301B Cummins Head Bolt Torque Adaptor. This 1 1/4" Boxsocket handles the head bolts located around the water manifold jacket of Cummins model "H" diesel engines without removing the manifold. The wrench is 12" long. Drive end fits 3/4" square drive handles or our TQ-602A "Torqometer" needed to torque these bolts to the required 450 foot pounds.

NEVER-SEEZ COMPOUND

An anti-seizure compound developed for use wherever sealing, true torque and easy disassembly is desired. Will seal and protect metal under most adverse pressure and heat conditions up to 2000° F. Does not act as an electrolyte, no danger of galvanic pitting even when dissimilar metals are joined. Cannot be washed off, or burned off or entirely removed by abrasion. Protective coating will remain even after long exposure to the elements.

★NS-40 Never-Seez, 1/4 lb. can
 ★NS-160 Never-Seez, 1 lb. can
 ★NS-164 Never-Seez, 1/2 gal. can
 ★NS-168 Never-Seez, 1 gal. can

★NS-165 Special Nickel Base Never-Seez Compound (1 lb. can) Designed to withstand extreme heat—from 400 to 600 degrees higher temperatures than the standard compound—up to 2500°. Use this compound in the same manner on parts and fittings to provide a protective, lubricating, heat-resistant covering. Equally useful on press fits as well as threaded fittings.



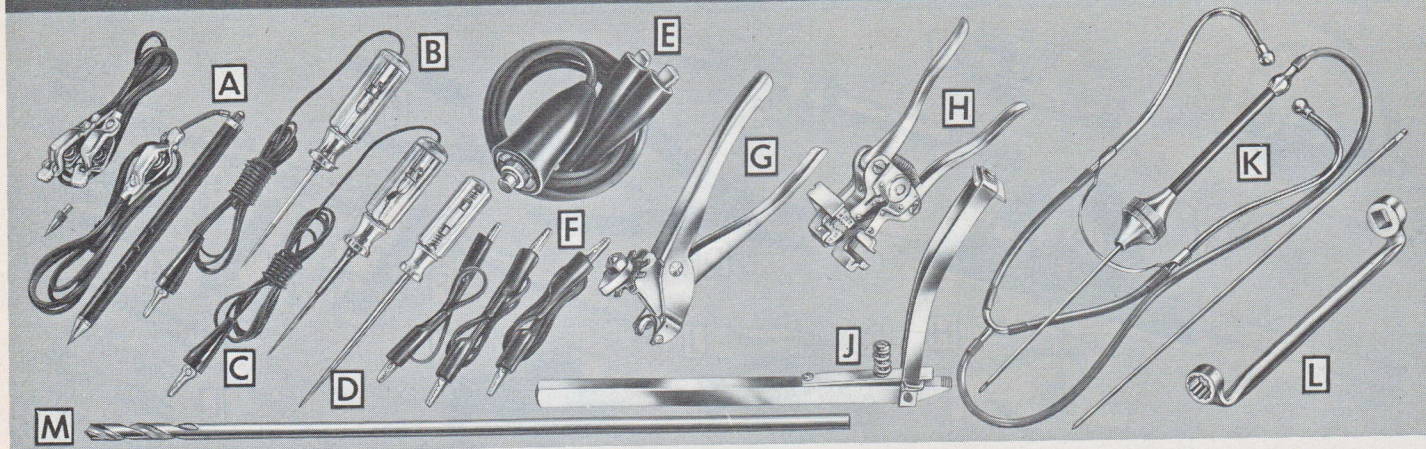
SNAPPY HAND CLEANER

The Lanolin coconut oil hand cleaner without water to remove oil, paint, stains, ink, etc. Purely blended to create a creamy texture that penetrates the skin, soothes the hands, and makes the hands smooth and pliable.

GA-150 Snappy Hand Cleaner, 1 lb. can
 GA-151 Snappy Hand Cleaner, 2 lb. can
 GA-152 Snappy Hand Cleaner, 5 lb. can



MISCELLANEOUS SPECIAL SERVICE TOOLS



A MT-330 Etching Pencil with $4\frac{1}{2}'$ lead wire. Can be used on either 6 or 12 volt systems to etch virtually any metal, removable parts or tools. Since parts must be grounded, a jumper wire of heavy multistrand same as lead wire is provided. Wires are flexible to avoid kinking. Pencil is small in diameter, has firm positive grip. The heavy duty replaceable solid copper tip has high current density. Black bakelite handle. The tip is not guaranteed.

★**MT-330-1** Replaceable etching tip.

MT-331-12 3' grounding jumper wire.

B ★CT-4A Circuit Tester. For 6 or 12-volt systems. Checks shorts, breaks or grounds in wiring, loose connections, grounds in field coils, stuck relay points, burned out bulbs. Speeds up electrical trouble shooting and saves you money. The sharp pointed steel shank is securely anchored in a clear plastic handle. A bolster prevents the shank from entering too far into the handle and breaking the bulb. A 9 volt bayonet type bulb, useable on 6 and 12 volt systems, is mounted in the handle. The 6' long cord is reinforced to prevent pulling loose from internal connections and has a rubber covered alligator-type clip for shock protection. After grounding the clip on the car, you push the point through the insulation on the cable being tested until it makes contact with the wire conductor inside. Over-all length is $7\frac{3}{4}"$. Shank length, $3\frac{3}{4}"$. Make tests with engine turned off.

C CT-5 Polarity and Circuit Tester. Similar in all respects and appearances to the CT-4A above except it has a diode built into it for polarity tests. Use for testing battery polarity, polarity of circuit, etc. Positive current causes neon bulb to light; negative current will not. In testing circuits, be sure to have correct polarity.

D ★STP-5A Spark Tester. Ignition systems used on late model cars are completely shielded so you can no longer make contact at the spark plugs with standard spark testing screw drivers. This tool consists of a transparent "Octo-Grip" handle with a neon tube fitted into it and a tapered prod with a very sharp point. In use this prod is pushed through the insulation of the high tension leads to contact the wire. Intensity of the neon flash indicates condition of the spark.

The handle is shock proof, even to the high voltage current encountered. A plastic screw makes it easy to change neon tubes when necessary. Blade bolster prevents the blade from pushing through the handle.

★**NT-2 Neon Tube.** Extra tube for above.

E MT-302 Remote Control Starter Switch. A handy switch that permits the operation of the automobile engine from either side or from beneath the car. The 5 foot leads are of ample length. Unit will carry current of any car with push-button starter including GM cars which use solenoids. Compact, made of highest quality materials that assure long life. Switch housing is of neoprene with positive, comfortable grip—keeps out dirt and moisture. Is shock-proof. Switch button is chrome plated, resists rust. Heavy duty switch has inlaid silver contact points to reduce arcing.

F MT-301 Test Lead Kit. This set of three jumper leads (one 12", one 18" and one 24") provides a safe and quick method for checking wiring between lights, switches, ignition testing etc. All three leads have an alligator clip at each end with powerful spring action to assure firm, electrical connection. Also used as extensions for existing test leads or for shorting out various components when doing ignition testing. Packed in plastic bag.

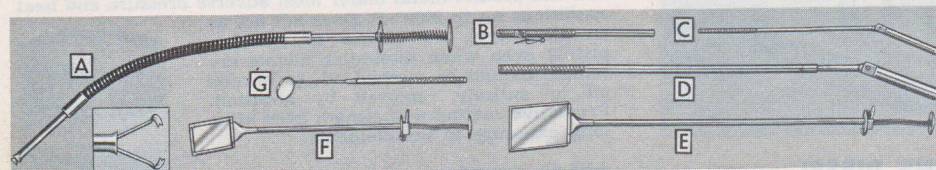
G CF-71 Spark Plug Gapping Tool for 14mm. $\frac{7}{16}"$ Reach, 18mm. Turbo Action, 14mm. $\frac{3}{4}"$ Reach and 18mm. Commercial. Will increase your spark plug sales by quickly giving exactly the right setting to the electrodes. Assure uniform, parallel gap for a fatter, surer spark. Motor runs smoother. You save time because you gauge and set the electrodes in one fast operation. Gauge wheel sets instantly for any car manufacturers' plug specifications. No "spring-back." Includes these sizes: .022, .025, .026, .028, .030, .032, .035, .036, .038, .040.

H GA-116 Wire Stripper. Just one squeeze on the handles of this tool removes up to 1" of insulation from a wire, leaving it clean and ready for connecting. The specially hardened jaws are easily replaceable and have 6 openings to handle 8 wire sizes from 8 thru 22. An adjusting screw regulates how close the jaws come together to further assure proper stripping of various types of insulation and different types of wire. As an aid when stripping a series of wires, an adjustable guide on the head of the tool can be set to remove $\frac{1}{4}"$ to 1" with every squeeze of the handle. $6\frac{3}{4}"$ long.

GA-116-2W-1 Replacement Blades, set of 2.

J GA-44A Flywheel Turner. Saves crawling out from under to turn the motor by hand or starter . . . helps you place the crank shaft to the exact desired position to the fraction of a turn. Spring tension holds the tool fast to the flywheel leaving both hands free for work. A real time saver on clutch work, bearing work, ring installations and other jobs on any vehicle. The tool is also useful on outboard motor repair as it will hold the flywheel while the nut is torqued.

K GA-111A Mechanics Stethoscope saves time in locating and diagnosing any engine sound such as bearing noise, knocks, squeaks in fan or water pump, valve tappets, etc. Tells you where the trouble is before you start work. Stethoscope has sound amplifying diaphragm and shock-proof plastic shaft. Comes complete with 6" probe and an additional 12" extension probe.



FLEXIBLE "GRIP-IT" TOOL

A 715-FF Fully-Flexible "Grip-it". 15" long, with an 8" flexible section. Bends into a double "S" or a double right angle and still grips any object tightly in the jaws. The plunger actuates two powerful spring steel jaws the ends of which are notched to give a secure grip.

MAGNETIC PICK-UP TOOLS

Powerful permanent Alnico magnets are fitted to the ends of brass sleeves. The small outside diameters enable them to slip into small openings with ease, while the hinged heads give around-the-corner accessibility as well. Picks up any small iron or steel object.

B PT-6 Pocket Pick-up. Lifts 16 oz. 6" long.

C PT-9 Small Pick-up. Lifts 16 oz. $9\frac{1}{4}"$ long.

▲ **D PT-27 Large Pick-up.** Lifts 24 oz. Length $16\frac{1}{2}"$. Sliding handle extends to 27".

INSPECTION MIRRORS

Square mirrors tilt for best viewing position, operated by plunger. Round mirrors are fixed, set at 135° angle, solid handle.

E With $1\frac{1}{16} \times 2\frac{1}{16}"$ mirror.

★**GA-51A** $16\frac{1}{2}" \times 3"$ mirror.

★**GA-51A-1** Extra glass mirror $1\frac{1}{16} \times 2\frac{1}{16}"$.

★**GA-51AP** $16\frac{1}{2}"$ long with plastic mirror.

★**GA-51A-1P** Extra plastic mirror $1\frac{1}{16} \times 2\frac{1}{16}"$.

E With $2" \times 3"$ mirror.

★**GA-53** $16\frac{1}{2}"$ long with glass mirror.

★**GA-53-1** Extra glass mirror, $2" \times 3"$.

★**GA-53P** $16\frac{1}{2}"$ long with plastic mirror.

★**GA-53-1P** Extra plastic mirror, $2" \times 3"$.

F ★**GA-52A** 11" long with glass mirror.

★**GA-52A-1** Extra glass mirror $1\frac{1}{4} \times 1\frac{1}{2}"$.

★**GA-52AP** 11" long with plastic mirror.

★**GA-52AP-1P** Extra plastic mirror $1\frac{1}{4} \times 1\frac{1}{2}"$.

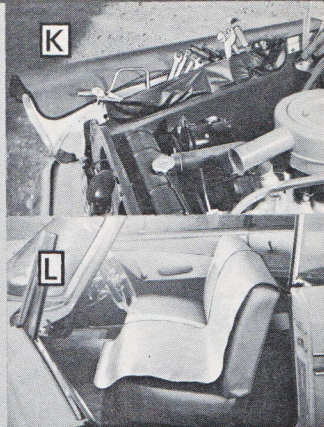
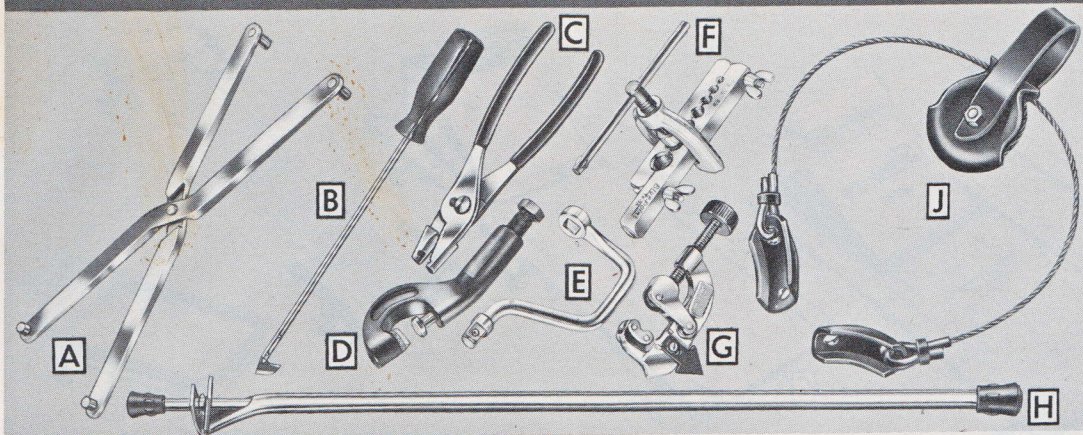
G **GA-145** 7" lg., $\frac{7}{8}"$ dia. S. steel mirror.

★**GA-145M** 7" lg., $\frac{7}{8}"$ magnifying SS mirror.

L S-8164A $\frac{5}{8}"$ Double Hex "Boxocket" with $\frac{1}{2}"$ square drive for a wide variety of applications such as: Cummins Diesel compressor base bolts; cylinder head wrench on Rambler; starter removal on Rambler; cylinder head torquing on most GMC V-6 and V-8 gas engines and most GMC Diesels; several applications on Buick and Olds; Chrysler exhaust pipe flange nuts; top housing bolts on Dodge, DeSoto and Chrysler to remove transmission without removing floor boards; front engine support bolts on Dodge, DeSoto, and Chrysler; steering arm lock nuts on Farmall tractors and Co-Op tractors. $9\frac{1}{4}"$ long.

M ★CSD-32C Spotlight Drill. A special $21\frac{1}{2}"$ long drill for mounting spotlights in the thick doors of late model cars. This $\frac{1}{2}"$ diameter drill has a 3" flute length for long drill life.

MISCELLANEOUS SPECIAL SERVICE TOOLS



A A-176 Differential Adjusting Wrench. Two sizes of prongs ($\frac{9}{32}$ " and $\frac{17}{32}$ " long) on spreadable arms fit the adjustment nuts on most Differentials. May also be used on other jobs such as on steering gears, some water pumps, transmissions, etc., where a spanner wrench of this type is needed. Tool is 10" long.

B ★A-165A Heater and Radiator Hose Cutter. Makes removal of old hose which is usually cemented in place a simple and easy job. Tool has cutter blade sharpened both front and rear so you can select edge that will cut best and clear obstructions. When hose is cut it is merely peeled off connection. $\frac{9}{16}$ " long, $\frac{1}{4}$ " diameter shank, Plastic handle.

★A-165-1 Replaceable Cutter Blade.

C ★HCP-48BP Hose Clamp Pliers. Two position slip joint model for $\frac{3}{4}$ " to 2" diameter Corbin hose clamps. The specially milled jaws hold the clamp securely in line with or at right angles to the handles. Black finish, handles covered with plastic. 8" long. **HCP-46BP** Same as HCP-48BP but smaller. Handles $\frac{3}{4}$ " and smaller hose clamps.

D NC-50 Nut Cracker. For removing any $\frac{5}{16}$ " to $\frac{13}{16}$ " rusted or "frozen" nut in a hurry, easily and safely. Simply turn the specially hardened chisel to the desired angle, position it behind the nut, then turn the power screw with any $\frac{3}{4}$ " wrench until the nut cracks and may be removed. Unit is compact to get into close quarters. Chisel swivels freely and is replaceable.

★NC-50-1 Replaceable Chisel

E S9527 Torque Adaptor. This adaptor is extremely useful for reaching main rod and connecting rod bearing bolts on all cars, trucks and tractors. It will also handle cylinder head bolts on some older cars. Attach the required size $\frac{1}{2}$ " drive socket and a TQ-150 "Torquemeter" to this adaptor and you can reach around obstructions and accessories to torque all the bolts accurately. $5\frac{1}{16}$ " long.

F TF-7A Flaring Tool for $\frac{3}{16}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{3}{8}$ ", $\frac{7}{16}$ " and $\frac{1}{2}$ " tubing—soft brass, copper, or aluminum. Slip-on yoke offers exceptional ease and speed because it cannot twist or turn. Open bottom allows flares to be made where there is little clearance.

G TC-28 Tubing Cutter for brass, copper and similar tubing from $\frac{1}{8}$ " to 1" dia. Cutting wheel on pivoted arm is fed into tubing when screw is turned, two rollers hold tube firmly. Arm retracts by spring. Burrs easily removed by retractable reamer blade. Cutter wheel held by screw.

★TC-28-1 Extra Cutter Wheel

H GA-37A Hood Jack. No cogs, catches, pumping or screwing is necessary to extend or lock this unit . . . just press the release lever and slip the push rod out to any desired length. Sturdy $\frac{5}{8}$ " aluminum frame with a solid push rod. It fits all cars and has rubber shoes on both ends to prevent slipping. 28" closed length, extends to 52".

J Engine SAF-T-LIF. This unit bolts to the cylinder studs on any engine and provides ample angle adjustment for raising and lowering engines in close quarters. Extra safe—it is tested for a 2 ton lift . . . and the hook adaptor fits lifts with large or small hooks. The Saf-T-Saddle permits the cable to be moved to the best lifting position but will not slip out of position under load. The flexible preformed, steel aircraft cable has attached end fittings drilled to fit $\frac{1}{2}$ " diameter studs.

Two sizes of Saf-T-Lifs are available. The GA-76B standard model is 30 inches long and comes complete with a universal hook adaptor. The GA-77B has a 36" cable for most V-8 engines and includes the hook adaptor. These tools give you a dependable, easy, safe method for handling engine removal and replacement jobs.

GA-76B.....SAF-T-LIF with Hook Adaptor.
GA-77B.....Long SAF-T-LIF with Hook Adaptor.

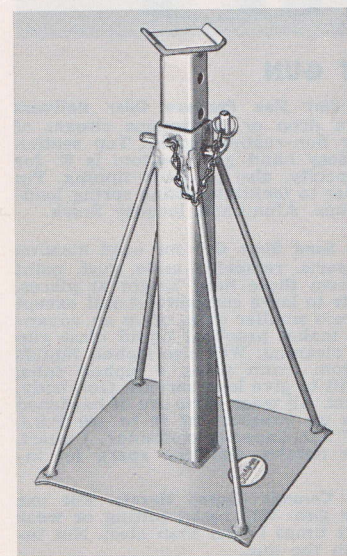
Fender and Seat Covers. Made with a rubberized surface that is impervious to oil, gasoline, and similar solvents, and is also highly resistant to battery acids. This surface is securely bonded to a non-slip rubber base and should not bubble or crack, even when folded.

K CK-6A Fender Cover. Size 22" x 47" with a 3-section tool pocket 5" x 30". The pocket hangs down inside the fender and provides a convenient holder for small tools or parts.

L CK-15A Seat Cover. 30" x 51". Big enough to cover both seat and backrest.

JACK STANDS ARE RUGGEDLY BUILT

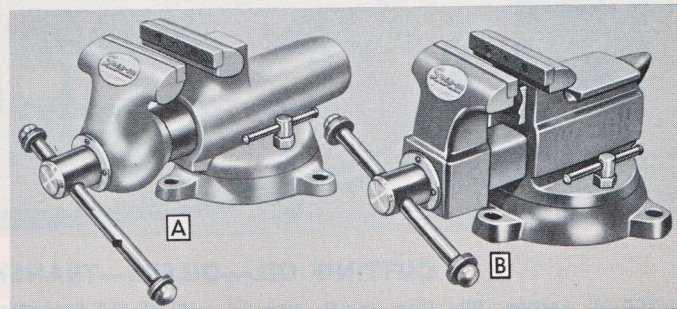
These SNAP-ON Jack Stands are ruggedly constructed and designed for stability and durability. The two sizes will handle virtually all situations and release your regular lifting jack equipment for other jobs. Bright red finish makes "spotting" or positioning easier. Steel base of each unit measures 10" square and is $\frac{1}{4}$ " thick. The base corners are positioned downwards to decrease possibility of sliding.



The 2" square center posts are welded to the base, and are further secured by four welded braces to provide maximum rigidity. These braces may also be used as handles in positioning the jack stands. The shaped saddles mounted on top of the center post extensions are positioned diagonally in relation to the base of the units to provide greatest stability and to provide easier alignment in use. Height adjustments are secured by means of 4" long, heavy duty lock pins. These pins are fastened to the center posts by link chains to prevent loss.

WA-122 Pair of Small Jack Stands provide a maximum height of 17" and a minimum of 11". Five height positions can be made at $1\frac{1}{2}$ " intervals. Net weight of pair is 22 lbs.

WA-125 Pair of Large Jack Stands provide a maximum height of 22 $\frac{1}{2}$ " and a minimum of 15". Six height positions can be made at $1\frac{1}{2}$ " intervals. Net weight of pair is 24 $\frac{1}{2}$ lbs.



VICES TO MEET ALL YOUR NEEDS

All five vises have swivel base 360° rotation with double lock that can be tightened with wrench. Bases have four mounting feet with drilled holes for bolting.

A CV-140 Cadet Mechanic's Vise—4" jaws. Made of malleable iron and semi-steel castings for rugged construction. Rounded body permits precision machining for smoother, easier, operation . . . prevents entry of chips and dirt. Screw is mounted directly in center of body eliminating off-center pull. Hardened steel serrated jaws are removable and interchangeable and can be turned upside down giving new gripping surface. Orange finish.

A CV-150 Same design as above but larger with 5" jaws.

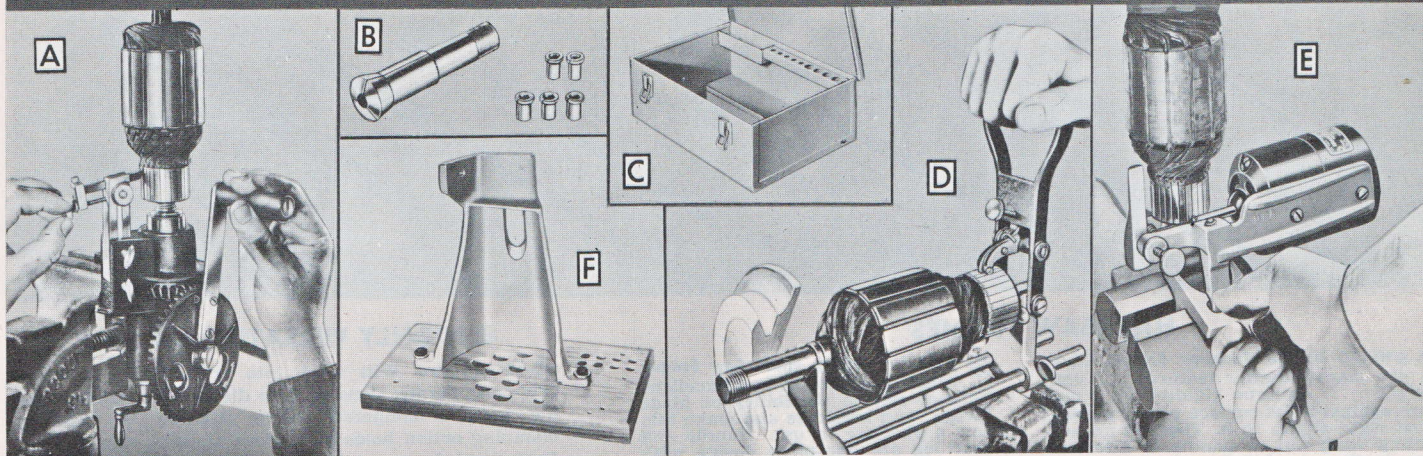
B CV-1644A Mechanic's Vise—4" jaws. Square body completely protects inner parts. Channel is unbreakable. Replaceable hardened steel jaws have deep serrations. Also has replaceable pipe jaws of hardened plated steel with capacity of $\frac{1}{4}$ " to 2". Maximum opening of heavy jaws is $4\frac{1}{4}$ ", depth is $3\frac{3}{4}$ ". Vice also has large forming horn and an extra large anvil which is surface ground. Grey finish.

B CV-1645 Same design as above but larger. 5" wide jaws open to $5\frac{1}{2}$ ", $3\frac{3}{4}$ " deep. Pipe capacity is $\frac{1}{8}$ " to $2\frac{1}{2}$ ".

B CV-1646 Same as CV-1644A but larger. 6" wide jaws open to 7". $4\frac{1}{8}$ " deep. Pipe capacity $\frac{1}{8}$ " to $3\frac{1}{2}$ ".

#

ARMATURE TESTING AND RECONDITIONING TOOLS



Commutator Turning Tool. This well engineered, sturdy machine turns out work equal to that done on expensive lathes. It handles armatures with .393", 1/2", 5/16", .591", 3/4", and 1 1/16" diam. shafts . . . does the job faster than a lathe—without removing back plates. Amount of cut is controlled to the finest shaving. Bottom handle raises the armature to starting position and the armature lowers automatically as the cut is made. After commutator is turned down, use a Mica Undercutter to finish the job.

A AT-2X-B Commutator Turning Tool Set including Turning Tool, 5 bushings (below), and cutter blade complete in KRA-108 metal box.

AT-2X Set. Above set without the box.

★AT-2-611/2" I.D. ★AT-2-64591" I.D.

★AT-2-629/16" I.D. ★AT-2-65393" I.D.

★AT-2-635/8" I.D.

★AT-2-16.....Armature Tool Steel Cutter Blade

OPTIONAL PART (Not Shown)

AT-2-56 Long Cutter Bar Assembly. For use on armatures with long shafts and where the regular cutter bar is too short.

B Small Collet and Bushings. Adapt the Armature Reconditioner to fractional power motors used in vacuum cleaners, fans, sewing machines, etc.

AT-2-70 ...3/8" Collet AT-2-73281" I.D.

AT-2-71 ...5/16" I.D. AT-2-74265" I.D.

AT-2-72296" I.D. AT-2-75250" I.D.

C KRA-108 Metal Box. Designed especially to hold the armature reconditioning tools, collets, bushings, etc. 13 3/4" x 9 3/4" x 4 1/2" high. Red enamel finish. Metal handle on top.

D UC-6 Mica Undercutter. Designed to eliminate the packing of copper chips in the corners. Reverse teeth in the cutter do the actual cutting on the return stroke. This reverse action feature also makes the teeth of the cutter blade self-cleaning. Simply clamp the base of the undercutter in a vise and attach commutator. Handles a wide range of commutator sizes without frequent parallel adjustments. The adjustable "V" base enables you to handle armatures without removing the pulley or end bell. One each of three blades listed are included.

★UC-6-015.....015" Thickness Blade (included)

★UC-6-020.....020" Thickness Blade (included)

★UC-6-025.....025" Thickness Blade (included)

★UC-6-010.....010" Blade (Not included)

E AT-1 Electric Mica Undercutter. Designed to perform faster, easier and much more accurately than is possible with manually operated units. Unique design permits attachment to any vise and does not require attachment to a lathe, etc., for use.

Highly Accurate . . . Depth of cut is easily adjusted by means of the adjusting screw lock nut. Cuts all grooves to exact same depth, resulting in better armature performance and longer brush life. The circular blade turns very rapidly and cuts all grooves cleanly with no copper flaring. This is important as flaring or grit could cause short circuits. Tool includes 4 blades listed below. Pulleys, end plate or gears need not be removed before undercutting. The V-Block handles all popular armature shafts and is adjusted by means of two knurled nuts on the frame of the tool. The motor operates on 110 volt, 25-75 cycle AC, or DC current.

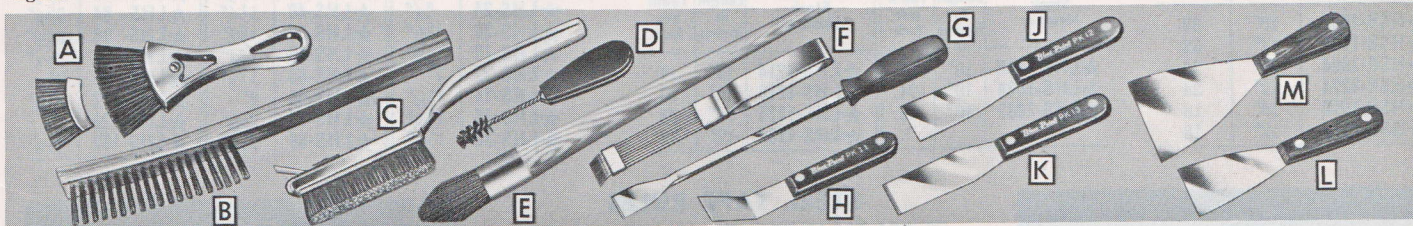
★AT-1-14A .010" Blade ★AT-1-14C .020" Blade

★AT-1-14B .015" Blade ★AT-1-14D .025" Blade

F ★AT-3AB Aluminum Stand with Oak Board Base as shown. Stand holds either the AT-2X Commutator Tool or AT-1 Mica Undercutter.

★AT-3A Aluminum Stand only

NOTE: Armature Growlers are shown on page 125.



WIRE BRUSHES AND SCRAPERS MAKE "CLEAN-UP" WORK SIMPLE AND EASY

A PARTS CLEANING BRUSH

Two piece aluminum handle is rust proof and spark proof for maximum safety when used with volatile solvents. Chemically treated replaceable bristles resist solvents and are anchored solidly in metal section. A nickel silver wire refill is available for cleaning threads. A brass screw clamps the parts together.

GA-81.....Brush with bristle head

GA-81-2.....Natural bristle refill

GA-81-3.....Nickel silver refill

B STANDARD WIRE BRUSH

★AC-58B Wire Brush. Do not confuse this high quality brush with the ordinary ones that give you limited life and usefulness. This brush, while inexpensive, has high quality, stiff wire bristles that have a lot of "spring" for long life. They are securely fastened into the hard wood handle.

F FLEXIBLE CARBON SCRAPER

★CS-1 Flexible Wire Carbon Scraper. Ten blades of high quality oil tempered spring steel. Flexibility controlled by a sliding ferrule. Does excellent work.

C WIRE BRUSH AND SCRAPER

★A-65 Hand Brush and Scraper. Has refillable type wire brush with metal handle and scraper. Heavy crimped wire resists bending and breaking. Outlasts ordinary brush.

★A-61.....Crimped wire refill only

★A-62.....Straight wire refill only

D TAIL LIGHT SOCKET BRUSH

★AC-41A Cleaning Brush for Tail-light Sockets. Stiff wire bristles remove rust, dirt and corrosion and clean socket and contacts with just a few quick twists. Assures positive bulb contact. The shaft is heavy gauge twisted wire that is wrapped around the edge of the flat wood handle. Handle provides a good, firm grip. Tool is 7 1/4" long.

E PARTS CLEANING BRUSH

★GA-157 Cleaning Brush. Nylon bristles are 2 1/4" long and comprise 1 1/4" diameter at the metal ferrule. They provide a long, rugged service life yet are flexible enough to do a first-rate cleaning job. The long wood handle gives access through close quarters and the bristle head tapers slightly to permit cleaning in small areas. Overall length is 15 1/2".

G RIGID CARBON SCRAPER

★CSA-12 Carbon Scraper. Forged 1/4" square shank flared out to 1" scraping width. Blade is slightly curved to allow tip to lie flat against work. Blade solidly anchored in plastic handle. Overall length 12".

SCRAPER BLADES

High quality scrapers for removing old gas-kets, paint, undercoating, grease, etc. The alloy steel blades are ground to uniform thickness for proper degree of stiffness and "mirror" finished for easy cleaning and to retard rusting. Light plastic handles do not shrink. Blades are firmly riveted in place.

H PK-11.....Bent Scraper, 1 1/4" blade

J PK-12.....Straight Scraper 1 1/2" blade

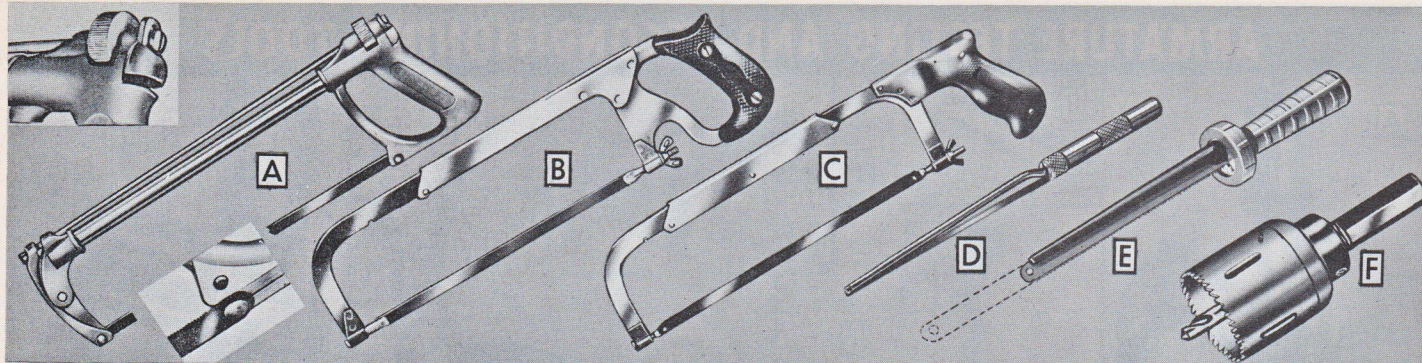
K PK-13.....Chisel edge Scraper 1 5/16" blade

WOOD HANDLE PUTTY KNIVES

Especially useful for spreading plastic material used in filling automobile body dents. Rosewood handles will not dissolve in this plastic. Have mirror finish blades, will withstand long service. Blades semi-flexible.

L PK-20.....2 1/4" blade Scraper

M PK-40.....4" blade Scraper



HACKSAW FRAMES

A ★HS-12 Deluxe Hacksaw Frame. Gives you many superior features . . . light weight . . . extreme rigidity . . . cuts flush against a flat surface either parallel or at right angles to it. There is no projecting wing nut or handle to interfere. Saw teeth extend below frame so that you can cut to floor or wall. Close-working front end allows working in close quarters like under hood of car. Has generous throat capacity. Storage place for blades in handle. Blade slides into machined slots in frame assuring perfect alignment. Tension obtained by lever action controlled by knurled nut . . . a slight adjustment provides rigid blade so that entire cut is controlled, there is no "wobble" and longer blade life results. For right angle use the blade is held by the pins onto the bottom surface of the end parts. Frame is only 16" long yet uses 12" blades.

B ★HS-8 Quality Hack Saw Frame. Rigid construction and excellent balance reduce possibility of blade "whip" and breakage and make this saw a pleasure to use. Handle and rear leg are one-piece design with large hand opening . . . power is delivered along the blade line . . . plastic hand plates offer a firm, comfortable grip and stand out in pleasing contrast to the plated frame. This frame will take 10" or 12" length blades.

C ★HS-1E Standard Hack Saw Frame. A good all around tool rigidly built to keep the blade taut at all times. Comfortable, metal pistol grip means less hand fatigue. Grip is securely riveted to the frame . . . frame length is adjustable . . . accommodates any 10" or 12" blade.

D ★HS-151 Junior Hack Saw. For use in very close quarters. Sturdily built to hold the blade with a non-buckling grip. Blades are 6" long x $\frac{3}{16}$ " wide, 32 teeth to the inch. Saw comes complete with one blade.

★HSB-632A Packet of ten blades. For the HS-151 Hack Saw Frame.

"BLUE POINT" BLADES

Tungsten alloy steel blades, heat treated to give hardness with flexibility. Good general purpose blades which will give long satisfactory service with proper use.

Package (10 Blades) Stock No.	Length	Teeth per inch
★HSB-1032	10"	32
★HSB-1232	12"	32
★HSB-1024	10"	24
★HSB-1224	12"	24
★HSB-1018	10"	18
★HSB-1218	12"	18

★Snap-on "HACKMASTER" BLADES

Made of Molybdenum high speed steel with back of blade annealed to make it unbreakable. Tooth edge hardened for durability. Sharp twists and kinks, which are the main reason for saw breakage, are absorbed without damaging the blade. Available as single blades or in packages of ten blades.

Stock Number	Length in Inches	Teeth per inch	Stock Number	Length in Inches	Teeth per inch
★LHS-1018	10"	18	★LHS-1214	12"	14
★LHS-1024	10"	24	★LHS-1218	12"	18
★LHS-1032	10"	32	★LHS-1224	12"	24
			★LHS-1232	12"	32

E HIGHLY VERSATILE JAB SAW

HS-13 Jab Saw. Will reach into areas where no other saw can operate. Consists of a die cast aluminum handle with a tempered sleeve attached. A patented clamping action holds a standard blade in any position. Broken blade may also be used for added economy. Blade replacement or positioning is accomplished quickly. A few left hand twists of the handle loosens the sleeve to permit blade movement in or out. A few twists to the right locks the blade securely in place. Designed to reach 6" into a $\frac{3}{4}$ " diameter hole with blade rigidly supported, the blade can also be extended to reach up to 10" further and flexed to cut flush with a surface.

▲ F HIGH SPEED HOLE SAWS

High speed cutting edge is welded to a tough alloy steel back that absorbs shocks and prevents shattering due to overload or twist. Long side grooves permit removal of cuttings. High speed pilot drills are $\frac{1}{4}$ " diameter.

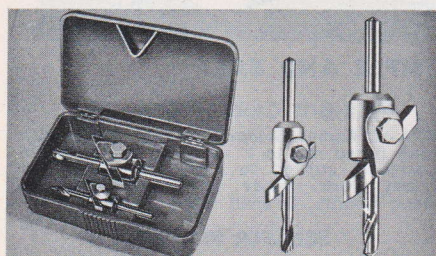
LHS-1 Arbor. Fits $\frac{9}{16}$ " to $1\frac{1}{16}$ " saws, $\frac{1}{2}$ " hex shaft.

LHS-2 Arbor. Fits $1\frac{1}{4}$ " and larger saws, $\frac{1}{2}$ " hex shaft.

LHS-5 Arbor. Fits $\frac{9}{16}$ " to $\frac{3}{16}$ " saws, $\frac{1}{4}$ " round shaft.

★LHS-4 Pilot Drill for above arbors. $\frac{1}{4}$ " diameter.

Stock No.	Dia.	Stock No.	Dia.	Stock No.	Dia.
★LHS-18	$\frac{9}{16}$ "	★LHS-40	$1\frac{1}{4}$ "	★LHS-72	$2\frac{1}{4}$ "
★LHS-20	$\frac{5}{8}$ "	★LHS-42	$1\frac{5}{16}$ "	★LHS-76	$2\frac{3}{8}$ "
★LHS-22	$1\frac{1}{16}$ "	★LHS-44	$1\frac{3}{8}$ "	★LHS-80	$2\frac{1}{2}$ "
★LHS-24	$\frac{3}{4}$ "	★LHS-48	$1\frac{1}{2}$ "	★LHS-84	$2\frac{5}{8}$ "
★LHS-26	$\frac{13}{16}$ "	★LHS-52	$1\frac{5}{8}$ "	★LHS-88	$2\frac{3}{4}$ "
★LHS-28	$\frac{7}{8}$ "	★LHS-56	$1\frac{3}{4}$ "	★LHS-92	$2\frac{7}{8}$ "
★LHS-32	1"	★LHS-60	$1\frac{7}{8}$ "	★LHS-96	3"
★LHS-34	$1\frac{1}{16}$ "	★LHS-64	2"	★LHS-112	$3\frac{1}{2}$ "
★LHS-36	$1\frac{1}{8}$ "	★LHS-66	$2\frac{1}{16}$ "	★LHS-128	4"
★LHS-38	$1\frac{3}{16}$ "	★LHS-68	$2\frac{1}{8}$ "	★LHS-132	$4\frac{1}{8}$ "



ADJUSTABLE HOLE CUTTERS

★HC-790 Bruno Hole Cutter Set. Two tools, will cut holes from $\frac{5}{8}$ " to $2\frac{1}{2}$ " dia. and $\frac{1}{4}$ " to $\frac{3}{8}$ " deep in sheet metal, brass, copper and aluminum—deeper holes in plastics wood and masonite. Simple to adjust to any diameter. Use in low speed drill presses, electric hand drills or hand braces. Tool steel blades, heat treated shanks. Plastic case included in set.

Stock No.	Size Shank	Capacity	Thickness Capacity	Pilot Drill
★HC-100	$\frac{1}{4}$ "	$\frac{5}{8}$ " to $1\frac{1}{2}$ "	up to $\frac{1}{8}$ "	$\frac{1}{4}$ "
★HC-101	$\frac{3}{8}$ "	$1\frac{1}{8}$ " to $2\frac{1}{2}$ "	up to $\frac{3}{8}$ "	$\frac{3}{8}$ "

★HC-100-1 Extra Blade for HC-100 Cutter.
★HC-101-1 Extra Blade for HC-101 Cutter.

STEEL TAPE RULES

A ★GA-524 12' White Tape. Here's a rule that gives extra rigidity for long measurements. The $\frac{3}{4}$ " wide blade is white with black inch and fraction markings and red foot markings and has the sliding tip. A large internal nylon brake holds the blade securely in any position and will not scratch or mar it in any way. Pressure on the circular center button releases the brake and a powerful spring retracts the blade. The unbreakable zinc alloy case is exactly 2" long for easy figuring of inside measurements.

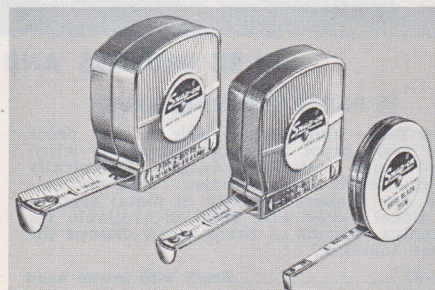
★GA-524-1 12' Replacement Blade for GA-524.

B ★GA-508 8' White Tape. $\frac{1}{2}$ " wide, black inch and fraction markings and red foot markings. The first 12" are graduated in 32nds, the remainder in 16ths. Has sliding tip for accurate inside and outside measurement. Blade graduated on both edges. Has unbearably zinc alloy case exactly 2" wide for easy inside measuring. The blade is held at the desired position by an internal nylon brake which will not scratch or mar the blade. When this brake is released by pressure on the circular center button, the blade is retracted by a powerful spring. No need to wind or push.

★GA-508-1 8' Replacement Blade for GA-508.

C ★GA-510 10' White Tape. This rule has the same features as GA-508 but has a 10' white blade, $\frac{1}{2}$ " wide.

★GA-510-1 10' Replacement Blade for GA-510.



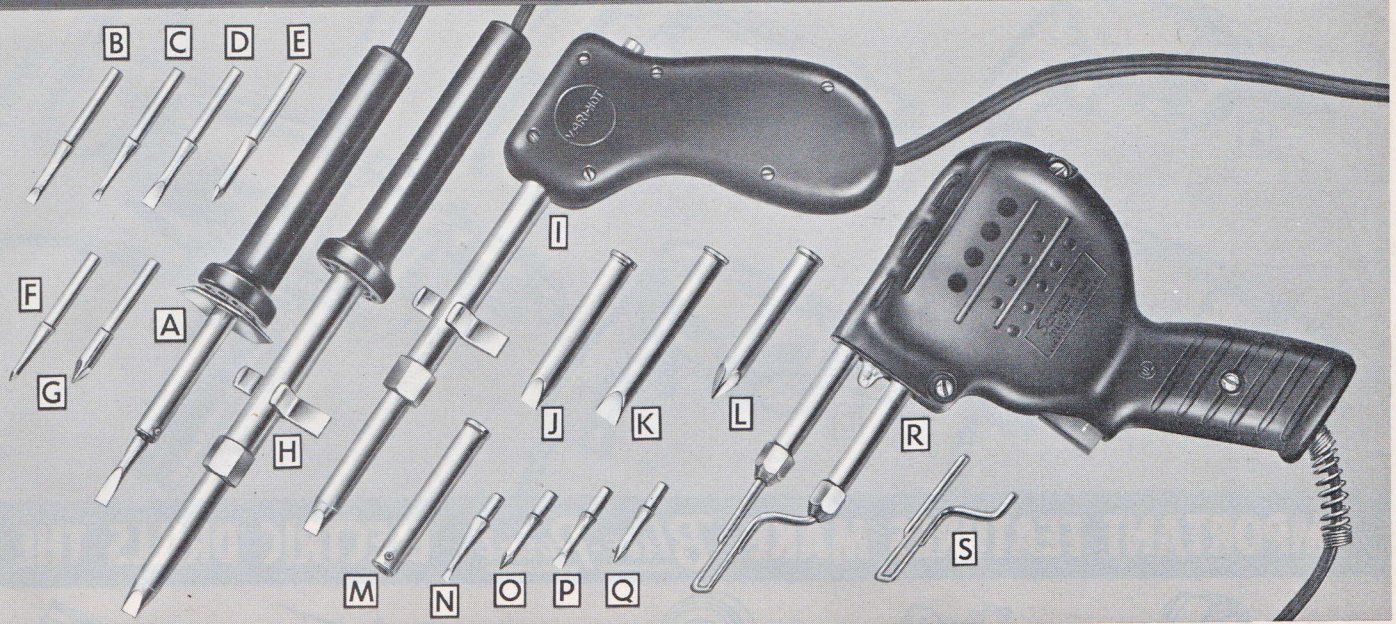
C ★206W 6' White Tape. Black markings. Very thin, pocket-watch size. Fully chrome plated case is only $\frac{5}{16}$ " thick, $1\frac{1}{4}$ " in diameter. Blade is $\frac{1}{4}$ " wide.

★206WB 6' Replacement Blade for 206W. White with black markings, $\frac{1}{4}$ " wide.



★GA-2 6" Steel Rule. Stiff tempered, with ground edges, $\frac{3}{4}$ " wide, .035" thick, graduated in 32nds on one edge and 64ths on the other. Decimal equivalent etched on back. Stainless steel—will not rust.

Snap-on INDUSTRIAL TYPE ELECTRIC SOLDERING IRONS



IRONS WITH CONTROLLED TEMPERATURES FOR CONTINUOUS USE

These specialized types of soldering irons were engineered for electronics, radio, TV, and similar industries where a variety of soldered connections are made round-the-clock. They provide you with light weight, compact, easy-to-use irons that minimize operator fatigue and maintain a constant tip temperature for continuous operation. Six foot cords have a Coroprex covering that is impervious to oil, grease, or temperature.

A PENCIL IRON

This feather weight model gets into restricted areas for tiny soldering jobs such as sub-assembly on high speed industrial production work. It operates on 115 volt AC/DC and maintains a constant tip temperature of 850° F. at only 18 watts. Six various small sizes of copper tips provide a range of sizes and styles for every soldering job. Wipe these tips when hot to clean them—do not file them. The barrel and heating element form a one-piece unit with the end open to receive the tip. A slight taper about 1¼" from the end of the tip holds it tightly in the barrel yet allows it to be interchanged instantly. A hexagon collar prevents the iron from rolling and keeps the tip off the bench. Black plastic handle is shockproof and stays cool at all times. Overall length 7½", weight 5 oz.

A R-130 Pencil Iron with R-130-16 ¼" Chisel Tip only.

Additional Tips for Pencil Iron

Chisel Tips

- B ★R-130-12 ¾"
- C ★R-130-14 ½"
- D ★R-130-16 ¼"

Pyramid Tips

- E ★R-130-13 ¾"
- F ★R-130-15 ½"
- G ★R-130-17 ¼"

★R-1306 Set. The R-130 and six above tips.

H STRAIGHT IRONS

Light weight straight irons for all around industrial use. The heating element extends into the hollow tip to provide fast heating and maintain the constant tip temperatures listed below. Seven different tips listed at right are quickly interchangeable; the R-115A-9 tapered chisel tip comes with each iron, the other tips and tip holder may be purchased separately. The plastic handle is shock-resistant and stays cool even under continuous operation . . . it flares out at the tip end for convenient grip and prevents burns by keeping fingers away from the barrel. A sliding collar keeps the hot tip clear of the bench surface when laid down and pushes up the shaft to permit working through small openings.

The R-125 is the standard model. Three additional straight irons with different operating temperatures are available on special orders. All models are 115 volt AC/DC. Length 10½", weight 7 oz.

- H R-125 Straight Iron (825° F. at 55 watts)
- *R-126 Straight Iron (550° F. at 25 watts)
- *R-127 Straight Iron (650° F. at 40 watts)
- *R-128 Straight Iron (910° F. at 75 watts)

*Available on special order only.

I PISTOL GRIP 2-SPEED IRONS Reach Soldering Heat in 40 Seconds

This iron goes to work fast . . . pressing the button shoots a booster charge of 100 watts within the tip—brings it to soldering heat in 40 seconds. Then, without using the button, 25 watts maintain 500° F tip temperature. The hermetically sealed dual element is located entirely within the tip—right where you want the heat . . . element wires are non-corroding monel. Full current is always available by pressing the button.

A sliding collar on the shaft keeps the hot tip away from the bench surface when laid down . . . yet pushes up the shaft to allow entrance through small openings. Phosphor-bronze switch has pure silver contact points—will not flash or arc.

For standard power circuits order Model R-115B, 110-115 volt AC/DC unit. For aircraft, and marine, use from ship's supply order Model R-28B, 28-32 Volt AC/DC unit. This latter model affords the same temperatures as the R-115B. The 28 volt input is 0.9 amps., at idling temp., and 3.6 at high heat. R-115B Iron 115 Volt AC/DC with R-115A-9 Tapered Chisel Tip only. Weight 10 oz.

R-28A Iron 28 Volt AC/DC with R-115A-9 Tapered Chisel Tip only. Weight 10 oz.

Additional Copper Tips for Straight H and Pistol Grip I Irons

- J ★R-115A-9 ¾" diam., Tapered Chisel Tip
- K ★R-115A-10 ¾" diam., Full Chisel Tip
- L R-115A-11 ¾" diam., Pyramid Tip
- M R-115-116 Tip Holder, for the following tips:
 - N ★R-115-116-1 ¾" diam., Chisel Tip
 - O ★R-115-116-2 ¾" diam., Pyramid Tip
 - P ★R-115-116-3 ¾" diam., Chisel Tip
 - Q ★R-115-116-4 ¾" diam., Pyramid Tip

ELECTRIC SOLDERING IRONS

T ★R-276 Soldering Iron. Has a large, heavy 1" diameter tip to hold heat much longer than smaller irons. Solid compressed copper tip easily replaceable. Has trough stand. This model for 105-120 volts, AC/DC, 275 watts, 210-240 volt irons also available.

★R-276-1 Extra 1" diameter tip.

U ★R-140 Soldering Iron. A middle size iron with wide use since it holds heat well and yet is small enough for smaller jobs. Has ½" diameter tip, 105-120 volts AC/DC, 140 watts. Has formed wire stand.

★R-80-1 Extra ½" tip. Fits R-140 and R-80 Soldering Irons.

Snap-on INSTANT HEAT SOLDERING GUN

Saves Time on All Soldering Jobs

● **Faster Heat.** This heavy duty transformer type SNAP-ON soldering gun heats to solder melting temperature in only three seconds after you press the trigger . . . You eliminate waiting time and get the job done faster and more efficiently. There being very little metal in the tip, it cools very rapidly when trigger is released and as the switch cannot be locked in heating position, there is no danger of burning or starting a fire when the gun is put down during use.

● **Dependable Heat.** Every unit of the SNAP-ON Soldering Gun is engineered and built to give you long reliable service.

● **Replaceable Tips.** Special duty "Feraloy" plated tip withstands long use without bending or breaking and it will fit into tiny corners. Tip remains tinned indefinitely. Two hex shaped nuts hold tip tightly in the split chucks . . . You always get full wattage at the tip without arcing or burning at the contact areas.

● **Bright spotlight** is mounted in the housing and lights when trigger is pulled. Provides plenty of lighting on the job . . . no need to use extension lights.

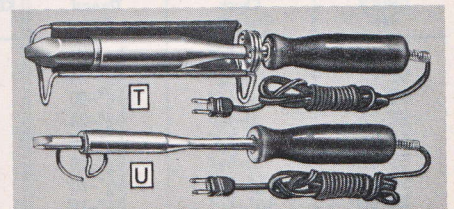
● **Plastic Housing.** Side gridwork provides ventilation to the transformer. The large pistol grip handle is well rounded for a comfortable fit to the hand and the fine balance of the gun helps cut working fatigue.

● **Heavy Duty Cord.** Enters at base of handle and is fitted with a metal strain reliever that prevents kinking or breaking at that point. Cord is 6 foot long.

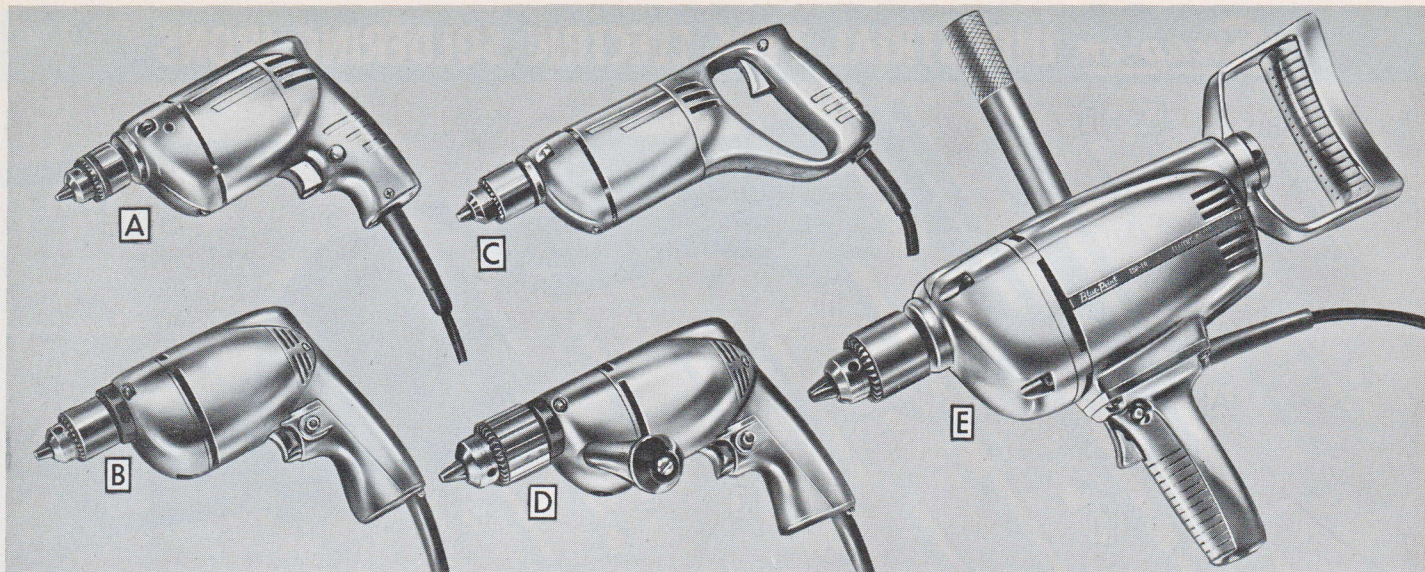
R R-250 Instant Heat Soldering Gun. For 115 volt A.C. current only. Will not work on direct current.

★R250-5 Replacement Bulb

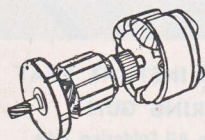
S ★R-250-20 Replacement "Feraloy" Tip
Guarantee. The gun is guaranteed against defects in material or workmanship for ninety days. Tips are not guaranteed.



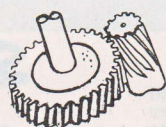
U ★R-80 Soldering Iron. Intended for small work. Uses same ½" diameter tip as the R-140 model at left but only 80 watts of power, 105-120 volts AC/DC. Has formed wire stand.



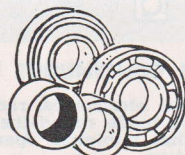
IMPORTANT FEATURES MAKE *Blue-Point* ELECTRIC DRILLS THE



Heavy Duty Motors used in BLUE-POINT Drills are specially built by one of the most experienced motor manufacturers in the U.S.A. They are engineered to give each drill the right power and speed for its job plus long service. Large fans prevent overheating.



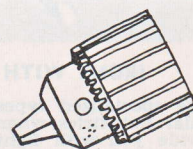
Precision Built Gears—BLUE-POINT Drills are fitted with precisely machined gears of helical or spur types. They provide the smooth tooth contact over a maximum tooth area that contributes to quieter gear operation and long satisfactory drill life.



Lubricated Bearings—Self lubricating, anti-friction type bearings are used in BLUE POINT Drills. Ball and needle roller bearings are used in most models and are sealed against grit. Special duty models have oil retaining bronze bearings and ball thrust bearings.



Trigger Switches on these drills are the enclosed double-pole construction with instantaneous contact. They lock-on for continuous operation and a pull on the trigger releases the lock for intermittent work. Triggers are located to give effortless operating ease.



3-Jaw Geared Chucks—used on all BLUE-POINT drills are heavy duty construction... your insurance of fast, positive operation and long service life. Threads on the spindle shaft are precision ground to fit perfectly and insure minimum chuck runout.

A 1/4" SPECIAL DUTY

Model EDP-25. Offers plenty of power for a wide range of general drilling jobs. Gears are all precision cut, and are mounted on oil retaining bronze bearings... a grease sealed ball thrust bearing takes the drilling load. Six feet of high quality 3-conductor cord are provided and a molded rubber strain reliever protects cord at the handle entrance. Check specifications below for full details.

A 1/4" STANDARD DUTY

Model EDP-27. A standard duty drill that weighs no more than a light duty drill. Gears are precision cut, mounted in oil retaining bronze bearings. Ball thrust bearing sealed in grease takes the load. Has trigger switch in pistol grip handle that locks for "on" position. 10 feet high quality 3-conductor cord with 3 prong plug is furnished. Plug is molded to cord. See specifications below.

B 1/4" HEAVY DUTY

Model EDS-25. This powerful model is the choice of many users for all types of production work and for constant heavy duty installation operations, as well as intermittent repair and maintenance jobs. It is built to handle the toughest drilling jobs in its chuck capacity range. Long pistol-type handle provides a comfortable hand grip, convenient trigger, and effortless handling. Specifications below.

C 1/4" HEAVY DUTY

Model EDP-26. Our most powerful 1/4" capacity drill. It is powered and geared to stand up under continuous heavy duty drilling on production lines or for constant use in maintenance, installation and repair work. On jobs where lower quality and lower powered drills might overload, this model turns in peak performance. Hand grip placed back of drill affords direct pressure. See specifications below.

A 3/8" SPECIAL DUTY DRILL

Model EDP-375. Here is an inexpensive, light weight drill especially useful for service stations, garages and home workshops. It will handle all a 1/4" drill will do plus practically the same jobs a 1/2" drill will do. 3 for the price of one. Pistol type handle with trigger switch. Removable plastic side handle for two handed operation. Has 10 foot power cord with molded-on 3 prong plug. See below for specifications.

D 3/8" STANDARD DUTY DRILL

Model EDS-38. You cannot beat this model for general purpose drilling in steel up to 3/8" or boring in wood up to 3/4". It has power a plenty yet is lightweight and compact for its capacity. Lighter and smaller than many 1/4" drills, it gives you the extra chuck capacity so often wanted in a smaller drill. At 750 r.p.m., it develops high torque for tough drilling jobs. See specifications listed below.

E 1/2" SPECIAL DUTY DRILL

Model EDP-50A. Low priced but high quality, this drill will give long hard service for automotive and industrial use. The rear spade handle fits onto an octagon base and locks in either of the eight-positions. The pipe handle unscrews for close work. Armature shaft has permanently lubricated sealed ball bearings, gear shafts have porous bronze bearings and a chuck shaft ball thrust bearing. Specifications below.

▲ REPLACEMENT CHUCKS AND CHUCK KEYS

Chucks are complete with key and rubber key holder

CHUCK No.	Chuck Capacity	Thread Size	KEY & HOLDER No.
SC-1A	0-1/4"	3/8"-24	SCK-1
SC-4A	0-1/4"	3/8"-24	SCK-4
SC-4B	0-1/4"	1/2"-20	SCK-4
SC-2A	0-3/8"	3/8"-24	SCK-2
SC-3B	0-3/8"	1/2"-20	SCK-5
SC-3D	0-3/8"	5/8"-16	SCK-5
SC-5B	5/64"-1/2"	1/2"-20	SCK-5
SC-5D	5/64"-1/2"	5/8"-16	SCK-5
SC-6D	0-1/2"	5/8"-16	SCK-6
SC-8F	1/8"-5/8"	3/4"-16	SCK-6
SC-9F	3/16"-3/4"	3/4"-16	SCK-9
SC-13A	1/16"-3/8"	3/8"-24	SCK-13

Equipment and Specifications

Equipment, all models: 3-Jaw geared chuck with a chuck key and key holder... 3 wire cord with 3-prong plug. Detachable side handle on models EDP-375 and EDS-38, detachable pipe handle on model EDP-50A.

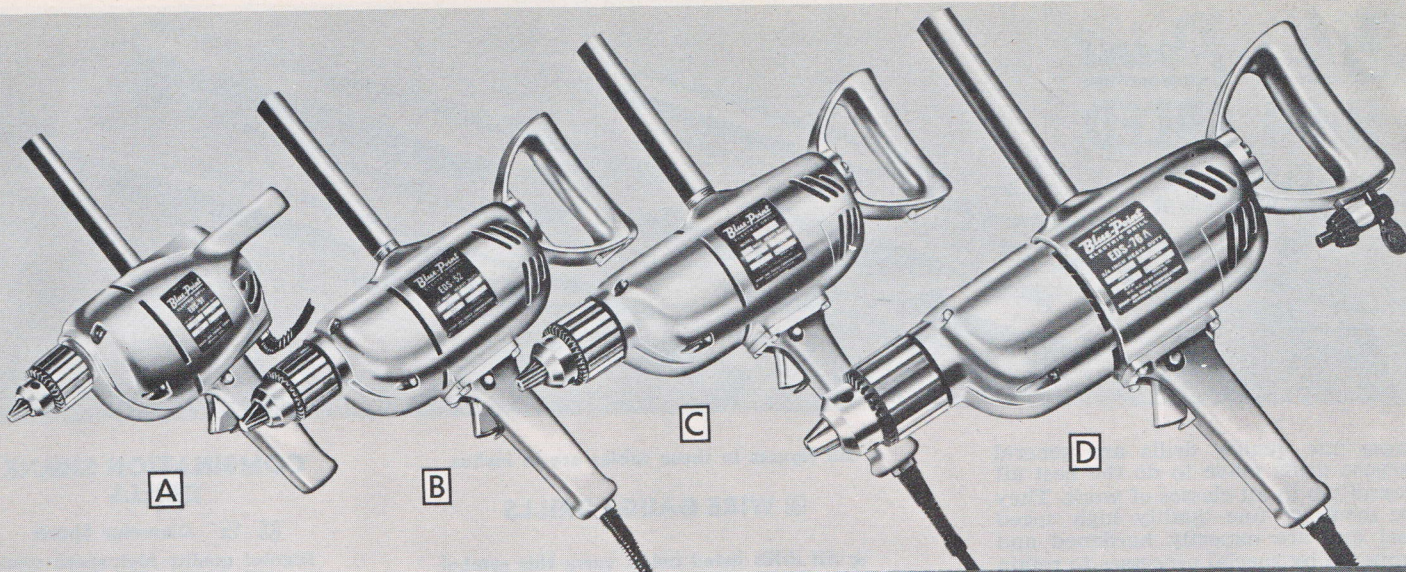
Motors: Universal D.C. or A.C. up to 60 cycles.

Voltage: 115 volt standard, 220 volt available on special order on all above models except EDP-25 and EDP-50A.

Comparative Specifications

Drill Model No.	Duty Rating	Chuck Thread	Amps Used	Cap. in Steel Inches	Cap. in Wood Inches	Std. speed no load r.p.m.	Overall Length Inches	Net Weight Lbs.
EDP-25	Special	3/8"-24	1.9	1/4"	1/2"	1500	8 1/4"	3
EDP-27	Standard	3/8"-24	2.4	1/4"	1/2"	1800	8 1/4"	3 1/4
EDS-25	Heavy	3/8"-24	3	1/4"	1/2"	1800	7 1/4"	3 1/4
EDP-26	Heavy	1/2"-20	4	1/4"	1/2"	1800	11 1/2"	4 1/4
EDP-375	Special	3/8"-24	2.4	3/8"	3/4"	1000	8 1/4"	3 1/4
EDS-38	Standard	3/8"-24	3	3/8"	3/4"	750	8 1/4"	4 1/4
EDP-50A	Special	1/2"-20	4.5	1/2"	1"	500	14"	10 1/4

▲ Federal Specs: GGG-C-00350 applies to "SC" series of chucks listed above.



BEST TO OWN AND USE . . . THERE'S A MODEL FOR EVERY JOB



Types of Handles—The type, size and pattern of the handle is designed to give the best balance and working convenience for the size of the drill. Pistol grips are compact and comfortable for light work. Rear spade or "D" handles are better for heavier work.



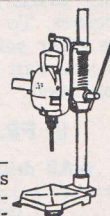
Chuck Keys are provided for all models. On the smaller models a rubber holder secures them to the cord and the larger drills have a key clip right on the tool. Keeps the key ready for each change of bits . . . avoids searching for a mislaid chuck key.



The Sturdy Housings are die cast aluminum alloy which gives you the greatest possible strength along with light weight and good looking design. The satin-smooth finish with rounded contours is easily cleaned, is not slippery and keeps its good looks a long time.



Ground-type Cords and Connector—Each drill has a 3-wire cord and plug with two power prongs and a ground prong. Plugs are molded onto the cords and the cords are protected by strain relieves where they enter the drill housing.



Drill Stands—Four models are listed below to convert BLUE-POINT drills. EDS-25, EDS-51A, EDS-52, EDS-64 and EDS-76A to stationary type drill presses for greater accuracy in many types of drilling operations.

A 1/2" STANDARD DRILL

Model EDS-51A. One of our most popular drills for general maintenance and repair work. Spade handle is an integral part of a compact housing which permits work in confined places . . . powerful motor tames the tough jobs. Helical gears supply dependable transmission of the power and ball and roller bearings promote smooth operation.

B 1/2" HEAVY DUTY DRILL

Model EDS-52. If you want a 1/2" drill packed with power to handle the toughest drilling jobs up to 1/2" in steel and 1 1/2" in hardwood, this is the one. It is the model most often chosen by railroads, truck body builders, and heavy industries. Compact and well balanced, it is easy to handle in any position. See specifications below.

C 5/8" HEAVY DUTY DRILL

Model EDS-64. There's a "bellyful of guts" hidden inside this good looking, well balanced aluminum housing. Built for continuous use, this drill has the power to handle all tough drilling up to 5/8" in steel and up to 1 1/2" in hardwood. On the job it has that well balanced "feel" that makes it easy to hold and control. See specifications below.

D 3/4" HEAVY DUTY DRILL

Model EDS-76A. Packed with power and stamina and built as rugged as they come to give you a drill you can depend on when you are up against the really tough jobs. It is widely used with wood augers up to 2" diameter for deep boring in timber as well as for steel drilling up to 3/4" . . . and it's good for years of constant service.

Equipment and Specifications

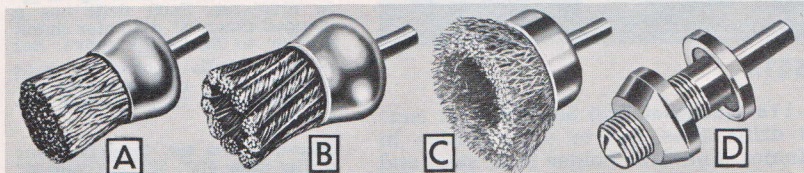
Equipment, all models: 3-Jaw geared chuck with chuck key, key holder or clip . . . 3 wire cord with 3-prong plug . . . detachable pipe handle . . . adjustable spade handle on all except model EDS-51A.

Motors: Universal D.C. or A.C. up to 60 cycles.

Voltages: 115 volt standard. 220 volt available on special order on all models listed above.

Comparative Specifications

Drill Model No.	Duty Rating	Chuck Thread	Amps Used	Cap. in Steel Inches	Cap. in Wood Inches	Std. speed no load r.p.m.	Overall Length Inches	Net Weight Lbs.
EDS-51A	Standard	1/2"-20	4.5	1/2"	1 1/2"	450	11 1/2"	8 1/2
EDS-52	Heavy	3/4"-16	6	1/2"	1 1/2"	550	15"	13
EDS-64	Heavy	3/4"-16	7	5/8"	1 1/2"	450	16 1/8"	14 1/4
EDS-76A	Heavy	3/4"-16	9	3/4"	2"	375	17 3/4"	16 1/4



CARBON BRUSHES

A ★AC-2 Standard. 1/4" stem. Made of crimped bright music wire for removing carbon from cylinder heads, parts, etc.

B ★AC-7A Spiral Twist. 1/4" stem, brush dia. 1 1/8". Has tightly twisted spirals of high quality .020" steel wire. Will quickly remove heavy deposits.

C ★AC-240 Cup-Type. 1/4" stem, brush dia. 1 3/8". Excellent for cleaning up tire rims and scuffing up inside of tire before cementing patch. Crimped .013" steel wire looped into hub.

ARBOR ADAPTOR

D A-24 Arbor Adaptor. 1/4" diameter shank. This unit adapts your electric drill to light grinding and wire brushing. Arbor is 1/2" dia. Use with brushes and wheels up to 4" dia.

★AC-414 Wire Brush. 4 1/4" diameter, 3/4" width of face. Made of .014" wire. Suitable for use on above arbor adaptor. Shown on page 47.

★EC-3 3-Prong Plug Adaptor. Connects 3-Prong Plugs to 2-Prong Outlets. Groundwire screws onto outlet box.

ELECTRIC DRILL BENCH STANDS

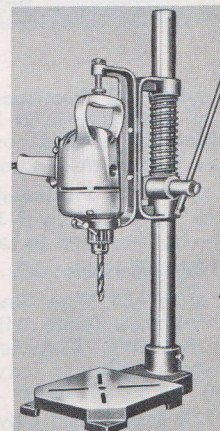
EDS-140 Stand. For EDS-25 Drill. 14" Vert. Adj., 4" head travel, 7" drilling radius from column center.

EDS-190 Stand. For EDS-51A Drill. 14" Vert. Adj., 4" head travel, 7" drilling radius from column center.

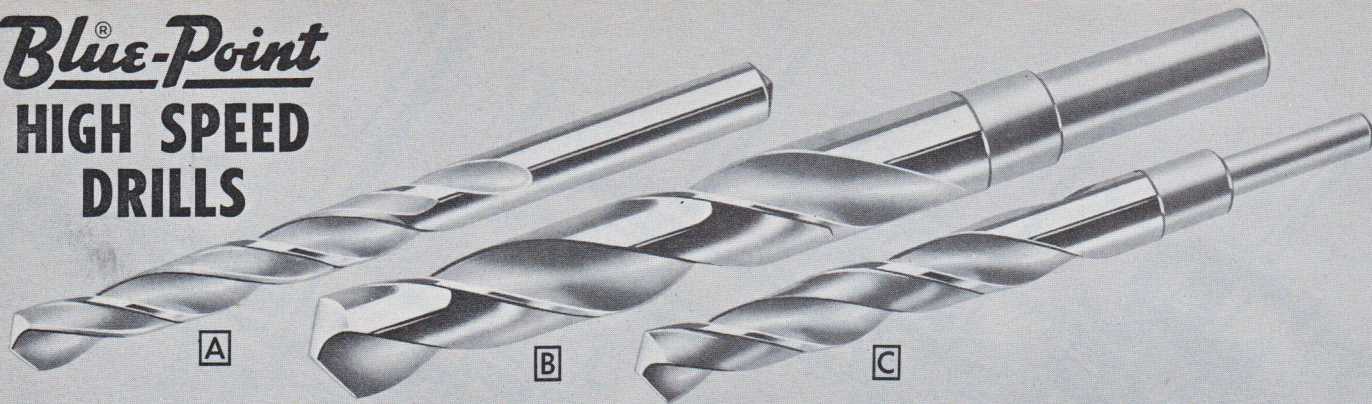
EDS-191 Stand. For EDS-52 Drill. 16" Vert. Adj., 5" head travel, 8" drilling radius from column center.

EDS-192 Stand. For EDS-64 and EDS-76A Drills. 16" Vert. Adj., 5" head travel, 8" drilling radius from column center.

Rack and pinion gearing produces great feed pressure with little effort. Unusually heavy base casting and column provide maximum rigidity to these bench stands.



Blue-Point HIGH SPEED DRILLS



These fine quality drills are general purpose drills made to do the best all around job in all classes of work. They are made of fine quality high speed steel and are expertly hardened and tempered by special processes to retain their sharpness for a long period of time. Each is precision ground to cut easily and accurately. For use in electric drills and power driven drill presses. To facilitate their safekeeping we offer sets in metal holders marked so you can quickly select the size drill you need.

A FRACTIONAL DRILLS

★All drills below carry this symbol.

No. & Diam.	Deci. Equiv.	L'gth.	No. & Diam.	Deci. Equiv.	L'gth.
DBE-1/16	.0625	1 7/8	DBE-19/64	.2969	4 3/8
DBE-5/64	.0781	2	DBE-9/16	.3125	4 1/2
DBE-3/32	.0937	2 1/4	DBE-21/64	.3281	4 5/8
DBE-7/64	.1094	2 5/8	DBE-11/32	.3437	4 3/4
DBE-1/8	.1250	2 3/4	DBE-23/64	.3594	4 7/8
DBE-9/64	.1406	2 7/8	DBE-3/8	.3750	5
DBE-5/32	.1562	3 1/8	DBE-25/64	.3906	5 1/8
DBE-11/64	.1719	3 1/4	DBE-13/32	.4062	5 1/4
DBE-3/16	.1875	3 1/2	DBE-27/64	.4219	5 3/8
DBE-13/64	.2031	3 5/8	DBE-7/16	.4375	5 1/2
DBE-7/32	.2187	3 3/4	DBE-29/64	.4531	5 5/8
DBE-15/64	.2344	3 7/8	DBE-15/32	.4687	5 3/4
DBE-1/4	.2500	4	DBE-31/64	.4844	5 7/8
DBE-17/64	.2656	4 1/8	DBE-1/2	.5000	6
DBE-9/32	.2812	4 1/4			

All figures in these tables are in inches

A WIRE GAUGE DRILLS

★ All drills listed below carry this symbol

No.	Deci. Equiv.	L'gth.	No.	Deci. Equiv.	L'gth.	No.	Deci. Equiv.	L'gth.
DBE-1	.2280	3 7/8	DBE-28	.1405	2 7/8	DBE-55	.0520	1 7/8
DBE-2	.2210	3 7/8	DBE-29	.1360	2 7/8	DBE-56	.0465	1 3/4
DBE-3	.2130	3 3/4	DBE-30	.1285	2 3/4	DBE-57	.0430	1 3/4
DBE-4	.2090	3 3/4	DBE-31	.1200	2 3/4	DBE-58	.0420	1 5/8
DBE-5	.2055	3 3/4	DBE-32	.1160	2 3/4	DBE-59	.0410	1 5/8
DBE-6	.2040	3 3/4	DBE-33	.1130	2 5/8	DBE-60	.0400	1 5/8
DBE-7	.2010	3 5/8	DBE-34	.1110	2 5/8	DBE-61	.0390	1 5/8
DBE-8	.1990	3 5/8	DBE-35	.1100	2 5/8	DBE-62	.0380	1 1/2
DBE-9	.1960	3 5/8	DBE-36	.1065	2 1/2	DBE-63	.0370	1 1/2
DBE-10	.1935	3 5/8	DBE-37	.1040	2 1/2	DBE-64	.0360	1 1/2
DBE-11	.1910	3 1/2	DBE-38	.1015	2 1/2	DBE-65	.0350	1 1/2
DBE-12	.1890	3 1/2	DBE-39	.0995	2 3/8	DBE-66	.0330	1 3/8
DBE-13	.1850	3 1/2	DBE-40	.0980	2 3/8	DBE-67	.0320	1 3/8
DBE-14	.1820	3 3/8	DBE-41	.0960	2 3/8	DBE-68	.0310	1 3/8
DBE-15	.1800	3 3/8	DBE-42	.0935	2 1/4	DBE-69	.0292	1 3/8
DBE-16	.1770	3 3/8	DBE-43	.0890	2 1/4	DBE-70	.0280	1 1/4
DBE-17	.1730	3 3/8	DBE-44	.0860	2 1/8	DBE-71	.0260	1 1/4
DBE-18	.1695	3 1/4	DBE-45	.0820	2 1/8	DBE-72	.0250	1 1/8
DBE-19	.1660	3 1/4	DBE-46	.0810	2 1/8	DBE-73	.0240	1 1/8
DBE-20	.1610	3 1/4	DBE-47	.0785	2	DBE-74	.0225	1
DBE-21	.1590	3 1/4	DBE-48	.0760	2	DBE-75	.0210	1
DBE-22	.1570	3 3/8	DBE-49	.0730	2	DBE-76	.0200	7/8
DBE-23	.1540	3 1/8	DBE-50	.0700	2	DBE-77	.0180	7/8
DBE-24	.1520	3 1/8	DBE-51	.0670	2	DBE-78	.0160	7/8
DBE-25	.1495	3	DBE-52	.0635	1 7/8	DBE-79	.0145	3/4
DBE-26	.1470	3	DBE-53	.0595	1 7/8	DBE-80	.0135	3/4
DBE-27	.1440	3	DBE-54	.0550	1 7/8			

COMBINATION SHANK DRILLS

□ 1/2" Diameter Shank

Highest quality high speed steel, specially hardened and tempered. Precision ground cutting edges. Drill holes up to 1" diameter with power tools equipped with 1/2" capacity chuck. 4 1/2" flute length provides long drill life. 6" overall length. Individually packed in protective envelopes.

Stock No.	Diam.	Dec. Equiv.
★CSE-345	1 7/32"	.5312
★CSE-365	9/16"	.5625
★CSE-385	19/32"	.5937
★CSE-405	5/8"	.6250
★CSE-425	21/32"	.6562
★CSE-445	1 1/16"	.6875
★CSE-465	23/32"	.7187
★CSE-485	3/4"	.7500
★CSE-505	25/32"	.7812
★CSE-525	13/16"	.8125
★CSE-565	7/8"	.8750
★CSE-605	1 5/16"	.9375
★CSE-645	1"	1.0000

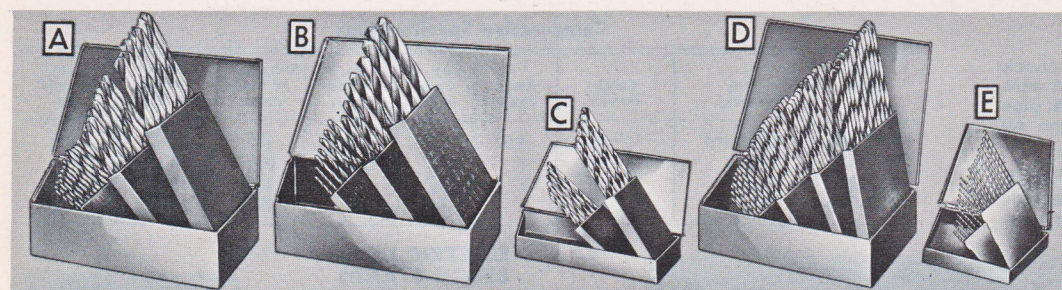


□ 1/4" Diameter Shank

Enables you to use your 1/4" electric drill to drill holes up to 1/2" in diameter. Each drill has a stepped down 1/4" diameter shank similar to figure B above. Set of four drills packed in neat plastic bag to protect edges. Individual sizes in protective envelopes.

★DB-425 Drill Set. Contains four drills: sizes 5/16", 3/8", 7/16" and 1/2" listed below, in plastic kit bag as shown.

Stock No.	Diam.	Dec. Equiv.
★CSE-182	9/32"	.2812
★CSE-202	5/16"	.3125
★CSE-222	11/32"	.3437
★CSE-242	3/8"	.3750
★CSE-262	13/32"	.4062
★CSE-282	7/16"	.4375
★CSE-302	15/32"	.4687
★CSE-322	1/2"	.5000



HIGH SPEED DRILL SETS

A ★DB-129 Fractional Drill Set. 29 Drills 1/16" to 1/2" inclusive in B-129 Holder. Sturdy steel holder has hinged cover. Drill compartments have size of drill stamped into metal.

B ★DB-115 Fractional Drill Set. 15 drills 1/16" to 1/2" by 32nds, in B-129 Holder. A good basic set—can be filled in later.

B-129 Drill Holder only.

E ★DB-120 Wire Gauge Drill Set. Consists of 20 tiny wire gauge drills sizes DBE-61 to DBE-80 inclusive. Complete in the H-120 Drill Holder. Holder is only 2" high—gives protection for small drills.

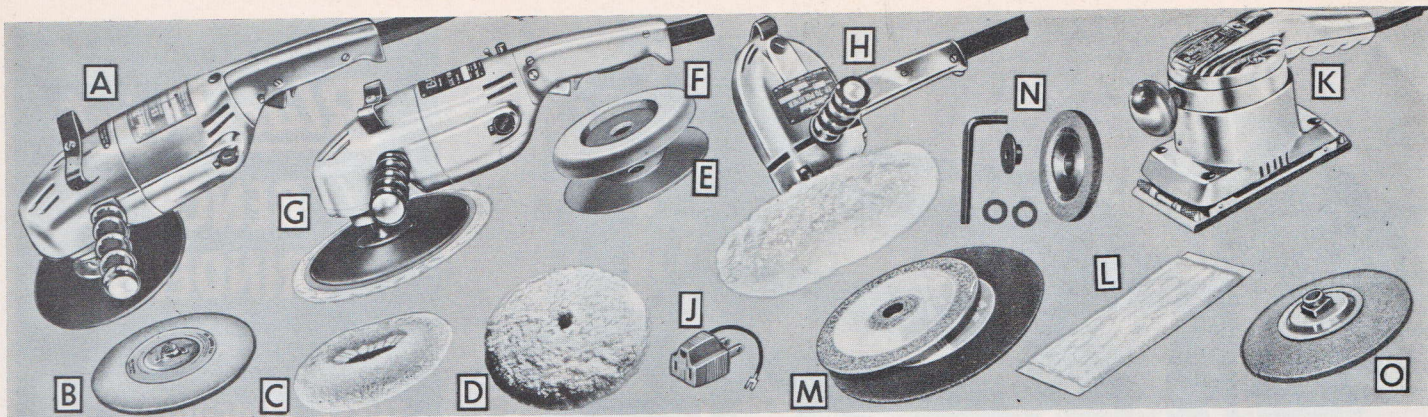
H-120 Drill Holder only.

C ★DB-113 Fractional Drill Set. This set contains 13 drills sizes 1/16" to 1/4" inclusive in B-113 Holder. The drill holder is of steel and is hinged as shown. Each compartment has drill sizes marked on it for easy selection.

B-113 Drill Holder only.

D ★DB-160 Wire Gauge Drill Set. This set contains 60 Straight Shank Wire Gauge Drills DBE-1 to DBE-60 neatly arranged in B-160 Metal Holder. Each individual drill compartment is marked with drill size for easy selection. Holder has 4 separate hinged containers.

B-160 Drill Holder only.



Blue-Point ELECTRIC GRINDER—SANDERS—POLISHERS AND ACCESSORIES

A 9" AND 7" SUPER DUTY SANDER

ES-71A Super Duty Grinder-Sander Extra powerful motor runs at high speed under heavy work loads. Inspection plate permits quick cleaning of commutator and brushes. Has the capacity for a 9" or 7" disc or 6" wire cup brush or 6" cup grinding wheel. Motor is 115 volt universal D.C. or A.C. up to 60 cycles, 9 amps. No load speed 5,000 R.P.M. Spindle has $\frac{1}{8}$ "-11 thread. Has reversible side handle, 3-wire cord and plug complete with backing pad, nut and wrench.

B SANDING DISC PAD

★ESP-7A Sanding Disc Pad. 7" molded rubber, for use on ES-71A Disc Sander. Gives flexible sanding action and long service.

ESP-9 Molded Sisal Backing Pad only, 9" diameter. Is stiffer than above pads.

C WOOL BUFFING BONNETS

Lambs wool, 1" pile, top grade skins, wide cloth side walls with drawstrings.

★WB-71A.....7" Bonnet for $\frac{5}{16}$ " pad
★WB-81A.....8" Bonnet for $\frac{3}{16}$ " pad
★WB-101A.....10" Bonnet for $\frac{1}{2}$ " pad

D WOOL POLISHING PADS

These pads are constructed of 100% combed virgin wool with $\frac{1}{4}$ " pile, bonded to a heavy duck backing for strength. Each pad has a $\frac{1}{8}$ " diameter, reinforced center hole for attachment to electric polishers.

Thin design permits use in restricted areas often encountered on modern automobiles and where bonnet-type polishers cannot be used.

These units are top quality products which will provide plenty of rugged service life.

★WB-75A $7\frac{1}{2}$ " Polishing Pad.

★WB-90 9" Polishing Pad.

E POLISHER BACKING PAD

★EPP-7 Backing Pad. For use on EP-70 and EP-72 Polishers. Molded rubber. 7" diam.

F SPONGE RUBBER BONNET PAD

★EPP-70 Sponge Rubber Pad. 7" diameter. Use with EPP-7 backing pad and wool bonnet.

G HEAVY DUTY 2-SPEED REVERSIBLE POLISHER

EP-72 7" Heavy Duty Reversible Electric Polisher. Low and high speed in either direction. Handles every type of buffing, cleaning and polishing job faster, easier and with much better results than with conventional polishers. The reversible direction feature eliminates swirl marks and also "fluffs-up" and helps clean the wool bonnet, resulting in longer bonnet life. Faster and easier polishing of contours, window trim, etc., is also aided by the reversible action.

"Low" Speed is good for rubbing, cleaning, removing spray marks, polishing in difficult areas, etc. Low Speed and reversible action helps develop a gloss on oxidized finishes, especially when used with heavy duty polishes without need of a second separate cleaning. The reversible action helps blend new and old finishes on repainting jobs. "High" Speed is good for final polishing and with reversible action is highly efficient for acrylic finishes. This tool can also be used for feather edge disc sanding, if equipped with the proper pad.

Motor is 115 Volt Universal DC or AC up to 60 cycles. Slide button reversing 2-speed switch has a safety lock to prevent reversing during operation, trigger type on-off switch has a locking pin. Each tool comes with a flexible backing pad, wool polishing bonnet, washer, bolt and wrench, neoprene covered tool rest and 3 wire cord and plug. Spindle has a $\frac{1}{8}$ "-11 thread.

H 7" VERTICAL POLISHER

EP-70 Vertical Polisher. Vertical construction eliminates bevel gears and contributes to compactness and quieter operation. Weight is centered directly over the spindle, making it easy to control the work. Motor is 115 volt universal D.C. or A.C., up to 60 cycles, $\frac{5}{8}$ amps. No load speed 1,300 R.P.M. Spindle has $\frac{1}{8}$ "-11 thread. Equipped with flexible backing pad, sponge rubber pad, wool bonnet, long and short pad nuts, wrench, side handle, 3-wire cord and plug. Weight—7 lbs. Recommended for intermittent use.

J ★EC-3, 3-Prong Plug Adaptor. Plugs into 2-prong outlet—has ground wire.

K OSCILLATING SANDER

ESP-20 Oscillating Sander. Sands, feather-edges and polishes. Shaded pole motor requires no commutator or brushes and works only on 115 volt 60 cycle. A. C. It has pre-lubricated sealed ball bearings. Pad resists kerosene, water soluble oils, water, etc. Unit uses one-third of 9" x 11" abrasive sheet... sanding surface is $7\frac{1}{4}$ " x $3\frac{3}{8}$ " and oscillates 3450 orbits per minute. Has 10' of 3-wire cord, 9 abrasive sheets and wool bonnet.

L ★WB-20A Polishing Pad. Especially shaped to fit the ESP-20 Oscillating Sander. Made of top grade wool. $\frac{1}{4}$ " pile with full chrome tan skin. 9" x $3\frac{3}{8}$ ".

M REINFORCED GRINDING DISCS

Reinforced Discs. Use on electric sanders for grinding welds, etc. They are lighter and less likely to break than cup-type wheels, however the use of a wheel guard is recommended. Made of several layers of material and grit bonded together. Standard discs are semi-flexible for general purpose or finishing work. H. D. discs are nonflexible for heavy duty grinding. $\frac{1}{8}$ " diam. arbor.

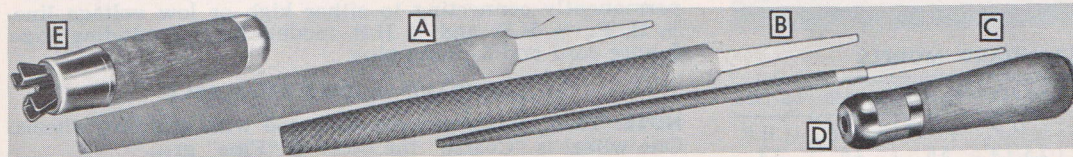
Stock No.	Description	Dia.	Thick.	Arbor
RD-7247	Std. Disc	7"	$\frac{1}{4}$ "	$\frac{1}{8}$ "
RD-9247	Std. Disc	9"	$\frac{3}{16}$ "	$\frac{1}{8}$ "
RDH-7247	H. D. Disc	7"	$\frac{3}{16}$ "	$\frac{1}{8}$ "
RDH-9247	H. D. Disc	9"	$\frac{3}{16}$ "	$\frac{1}{8}$ "

N RDP-50 Wheel Pad Kit. Use with above discs. Kit contains pad, flange nut with $\frac{1}{8}$ "-11 thread, $\frac{3}{8}$ " hex key and two spacers.

O REINFORCED CONCAVE GRINDING DISCS

Reinforced with layers of fibre glass and designed for use on right-angle portable grinders and disc sanders for fast, easy weld grinding, light snagging and similar jobs. Especially good when fast cut and long life is desired, or where severe dressing action of the disc is present. The concave shaped disc can be used at angles closer to the horizontal than straight wheels. Each disc has a permanently secured arbor mount with $\frac{1}{8}$ "-11 thread.

RD-7245 7"x $\frac{1}{4}$ " Disc. Max. Speed 7750 R.P.M.
RD-9245 9"x $\frac{1}{4}$ " Disc. Max. Speed 6000 R.P.M.



HIGH QUALITY "NU-CUT" FILES

Made of finest alloy steel and heat treated for durability and toughness. Teeth are cut with uneven spacing to assure smoother, fast cut and provide self-cleaning action. You buy the best when you buy from SNAP-ON.

Length	A		B		C Round Files	
	Mill Files Stock No.		Half Round Files Stock No.		Stock No.	Diam.
6"	★ 6-M		★ 6-HR		★ 6-R	$7\frac{1}{32}$ "
8"	★ 8-M		★ 8-HR		★ 8-R	$9\frac{1}{32}$ "
10"	★ 10-M		★ 10-HR		★ 10-R	$3\frac{1}{8}$ "
12"	★ 12-M		★ 12-HR		★ 12-R	$\frac{1}{2}$ "
14"	★ 14-M					
16"	★ 16-M					

A ★HBM-60-K Set. 6", 8", 10", 12", 14", and 16" Mill files in C-66-B kit.

B ★HBM-40-K Set. 6", 8", 10" and 12" Mill files in C-46B kit.

★HBH-40-K Set. 6", 8", 10", and 12" Half Round files in C-46B kit.

★HBR-40-K Set. 6", 8", 10", and 12" Round files in C-46B kit.

D WOOD FILE HANDLES

Metal ferrules molded into the wood prevents splitting. Gives sure grip and protects your hands. Smoothly finished, shaped for comfort.

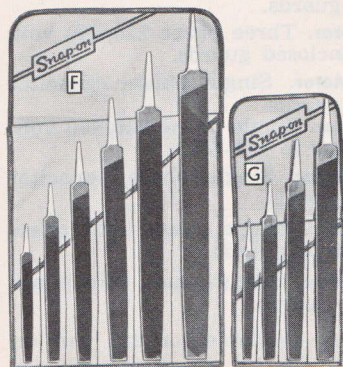
★ 102-E fits 6" to 8" files.

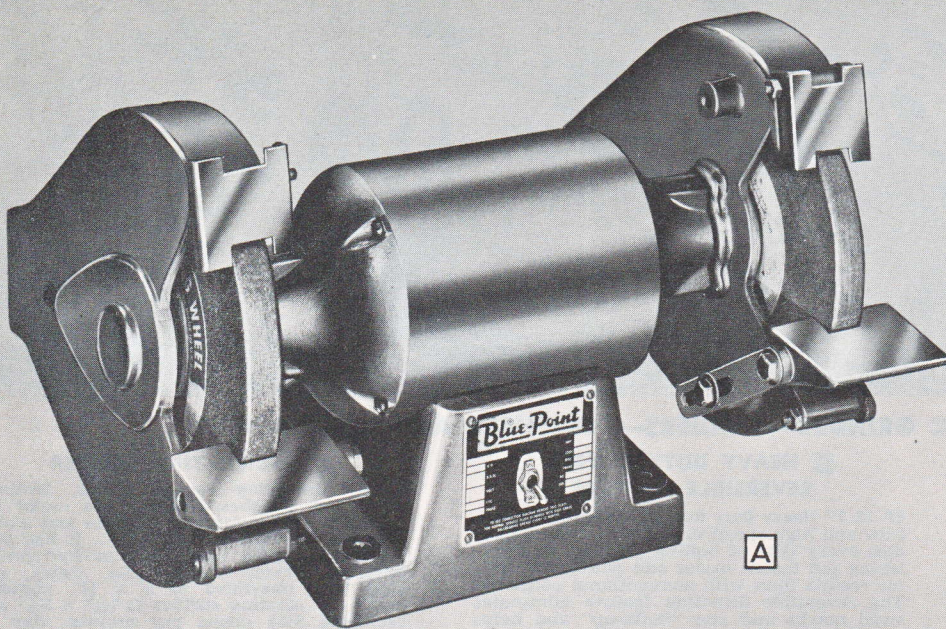
★ 103-E fits 8" to 10" files.

★ 104-E fits 12" to 16" files.

E TOOL HOLDER

★GA-98 Tool Holder. Provides large, comfortable grip for files and other tools. Has two adjustable serrated jaws that grip tool so it cannot turn. Jaws controlled by metal cap on end of handle. Maximum opening $\frac{3}{8}$ ", $4\frac{1}{2}$ " long, diameter 1".





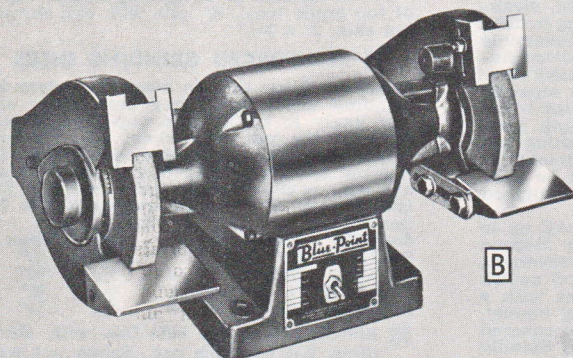
A

Blue-Point BENCH GRINDERS

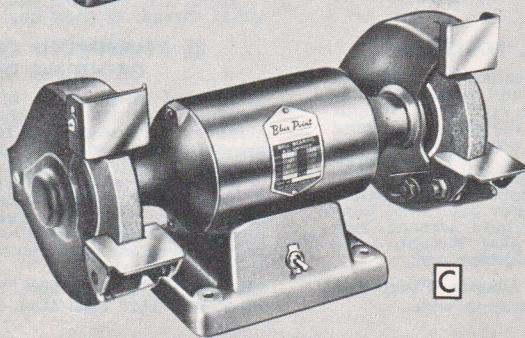
THESE SUPERIOR
FEATURES GUARANTEE
SMOOTH, POWERFUL
OPERATION

THESE GRINDERS ARE BUILT TO GIVE YOU YEARS OF DEPENDABLE SERVICE

- **COMPLETELY ENCLOSED MOTOR:** Super powered, precision balanced motors are enclosed to prevent dirt, grit, etc., from entering motor or bearings.
- **BALL BEARING CONSTRUCTION:** Oversize labyrinth grease sealed ball bearings used throughout, assure smooth, long lived motor operation.
- **MOTOR:** Capacitor start on 1 H.P., $\frac{3}{4}$ H.P. and $\frac{1}{2}$ H.P. models, split phase on $\frac{1}{3}$ H.P. and $\frac{1}{4}$ H.P. models.
- **LARGE WHEEL GUARDS:** Extra wide, enclosed types on all Blue-Point Bench Grinders provide the fullest possible protection and allow use of special shape wheels or wire brushes. They have a rear outlet which can be connected to industrial exhaust systems. The outlet sections of the guards are quickly removed to permit changing the wheels. Guards are drilled for easy installation of eye shields shown on opposite page and are furnished with fully adjustable chip breakers as illustrated.
- **BELL TYPE CONSTRUCTION:** On all models allows grinding of long pieces.
- **STURDY TOOL RESTS:** All models have tool rests which are fully adjustable for any type of work, with ample take-up for wheel wear and may be tilted 0° to 60° .
- **LARGE RUGGED CAST IRON BASE:** Equipped with rubber feet to provide solid mounting free from vibration. Has recessed bolt openings for permanent mounting.
- **WIRING:** 1 H.P. and $\frac{3}{4}$ H.P. models have junction box for permanently connecting to either high or low voltage line. $\frac{1}{2}$ H.P., $\frac{1}{3}$ H.P. and $\frac{1}{4}$ H.P. models have grounding type 3-wire cord and 3-prong plug.



B



C

SPECIFICATIONS OF STANDARD MODELS

Standard Models	BG-1000	BG-1002	BG-750	BG-752	BG-500	BG-333	BG-250B
Motor Rating	1 H.P.	1 H.P.	$\frac{3}{4}$ H.P.	$\frac{3}{4}$ H.P.	$\frac{1}{2}$ H.P.	$\frac{1}{3}$ H.P.	$\frac{1}{4}$ H.P.
Amperes	13	3.2/1.6	9.0	2.8/1.4	5.6	4.6	3.4
Voltage	115	220/440	115	220/440	115	115	115
Cycle	50/60	50/60	50/60	50/60	50/60	*60	*60
No Load RPM—							
at 60 cycles	1725	1725	3450	3450	3450	3450	3450
at 50 cycles	1425	1425	2850	2850	2850	2850	2850
Spindle Length	22"	22"	22"	22"	20"	16"	14 $\frac{1}{4}$ "
Spindle Height	6 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	5"	4 $\frac{1}{8}$ "
Total Height	12"	12"	11"	11"	9 $\frac{3}{8}$ "	8 $\frac{1}{2}$ "	7 $\frac{1}{2}$ "
Wheel Diam.	10"	10"	8"	8"	7"	6"	6"
Wheel Face	1"	1"	1"	1"	1"	$\frac{3}{4}$ "	$\frac{3}{4}$ "
Arbor Diameter	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{3}{4}$ "	$\frac{5}{8}$ "	$\frac{1}{2}$ "	$\frac{1}{2}$ "
Ship'g Wgt. Lbs.	121	121	105	105	68	36	26

*Available in 50 cycle on special order.

3-PRONG PLUG OUTLET ADAPTOR

★**EC-3 Adaptor** (Not illustrated). One end plugs into standard 2-prong outlet—the other receives 3-prong plug now used on almost all electric hand tools. Adaptor ground wire is screwed onto outlet. Molded rubber construction.

STANDARD MODELS AVAILABLE

NOTE: These grinders come equipped with grinding wheels. One wheel is "Coarse" the other is "Fine" grit.

A BG-1000 Grinder, 1 H.P. Motor. Single phase, capacitor start. Complete with enclosed guards.

A BG-1002 Grinder, 1 H.P. Motor. Three phase 220/440 volt, 3.2/1.6 amps. Complete with enclosed guards.

A BG-750 Grinder, $\frac{3}{4}$ H.P. Motor. Single phase, capacitor start. Complete with enclosed guards.

A BG-752 Grinder, $\frac{3}{4}$ H.P. Motor. Single phase 220/440 volt, 2.8/1.4 amps. Other specs similar to BG-750.

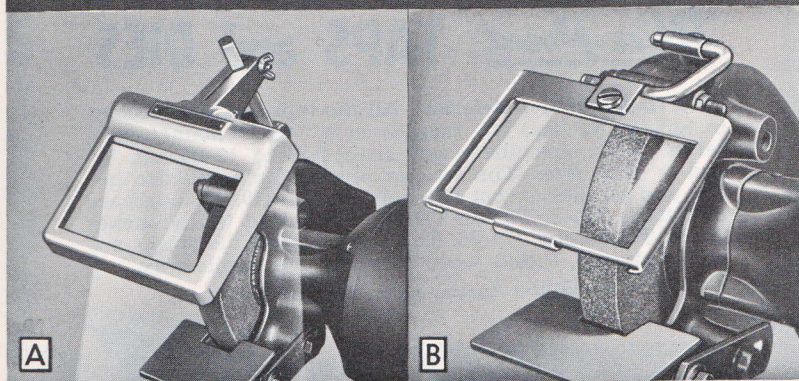
B BG-500 Grinder, $\frac{1}{2}$ H.P. Motor. Single phase, capacitor start. Complete with enclosed guards.

C BG-333 Grinder, $\frac{1}{3}$ H.P. Motor. Single phase, split phase start. Complete with enclosed type guards.

C BG-250B Grinder, $\frac{1}{4}$ H.P. Motor. Single phase, split phase start. Complete with enclosed guards.

NOTE: BG-500 and BG-333 are available for 220 volt on special order only.

BENCH GRINDER ACCESSORIES

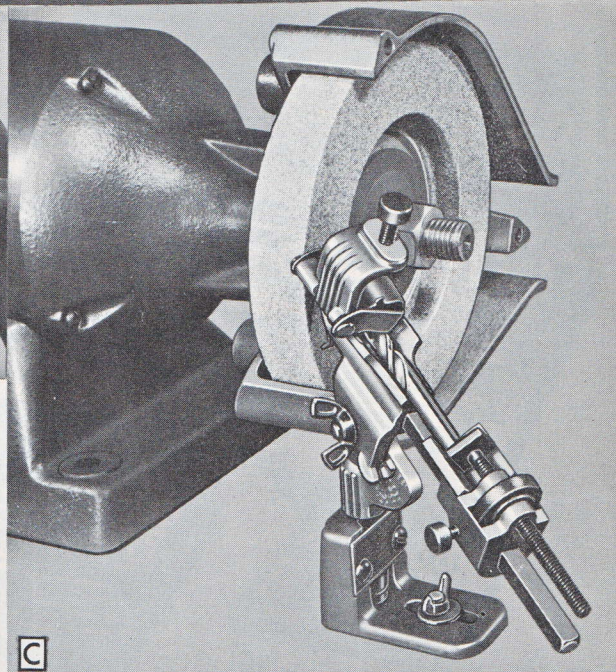


EYE SHIELDS PROVIDE PROTECTION

☐ **★S-60 Floodlight Eye Shield.** Two 25 watt 115 volt light bulbs in each shield flood work with direct light and provide visibility for safe work. Sturdy aluminum die cast frame has window opening 4" x 6" with top sheet of safety glass and bottom sheet of standard glass, easily replaced, if it becomes pitted. Easily attached to grinder, adjusts up or down, but cannot move accidentally to a non-guard position.

★S-60-1. Extra 25 watt Light Bulb.

☐ **★S-69 Standard Eye Shields.** Thick safety glass gives clear vision, with adequate protection from flying particles. Frame swivels to best working position for the job . . . easily attached to grinder.



ACCURATE DRILL GRINDING ATTACHMENT

☐ **DG-825 Drill Grinding Attachment.** Allows even the most inexperienced to turn out accurately sharpened drills with ease. It is fastened to the bench with only one bolt and it can be left in position along side the grinder or quickly removed after use. Adjustable for 49°, 59°, 68° and 88° and countersink point angles, handles drills from 1/8" to 3/4" diameters. The drill is held in a "V" type groove by a spring loaded clamp with a large adjusting screw. With drill installed, the attachment is swiveled back and forth across the side of the grinding wheel for expert sharpening job. Finished in red and black enamel.



QUALITY WHEELS FOR BENCH GRINDERS

Natural aluminum oxide abrasive, fully vitrified and balanced for fast cutting. Wheels furnished with bushings as listed below.

Stock No.	Bushing	Arbor	Grit	Dia.	Width
☐ Straight Sided Wheels					
★W-41646	NONE	1/2"	46	4"	1/2"
★W-41660	NONE	1/2"	60	4"	1/2"
★W-61636	5/8" & 1/2"	3/4"	36	6"	1/2"
★W-61660	5/8" & 1/2"	3/4"	60	6"	1/2"
★W-62436	5/8" & 1/2"	3/4"	36	6"	3/4"
★W-62460	5/8" & 1/2"	3/4"	60	6"	3/4"
★W-63236	5/8" & 1/2"	3/4"	36	6"	1"
★W-63260	5/8" & 1/2"	3/4"	60	6"	1"
★W-72436	5/8"	3/4"	36	7"	3/4"
★W-72460	5/8"	3/4"	60	7"	3/4"
★W-73236	5/8"	3/4"	36	7"	1"
★W-73260	5/8"	3/4"	60	7"	1"
★W-83236	3/4" & 5/8"	1"	36	8"	1"
★W-83260	3/4" & 5/8"	1"	60	8"	1"
★W-103224	1", 7/8" & 3/4"	1 1/4"	24	10"	1"
★W-103246	1", 7/8" & 3/4"	1 1/4"	46	10"	1"
★W-103260	1", 7/8" & 3/4"	1 1/4"	60	10"	1"
★W-106424	1 1/4", 1" & 7/8"	1 1/2"	24	10"	2"
★W-106446	1 1/4", 1" & 7/8"	1 1/2"	46	10"	2"
★W-106460	1 1/4", 1" & 7/8"	1 1/2"	60	10"	2"
☐ Recessed Wheels (use with drill grinding attachments)					
★W-43246R	NONE	1/2"	46	4"	1"
★W-63260R	5/8" & 1/2"	3/4"	60	6"	1"
★W-73260R	5/8"	3/4"	60	7"	1"
★W-83260R	3/4" & 5/8"	1"	60	8"	1"

▲ FAST WORKING WHEEL DRESSER

★WD-12 Wheel Dresser, removes glaze and trues up wheel in a hurry. Made extra strong. New cutters are easily inserted when old ones wear out. Hood over cutter protects operator.

★WD-12-1 Set of extra cutters for the WD-12 Wheel Dresser.

☐ HIGH QUALITY WIRE WHEELS

Made of high quality, selected wire and metal, bound to help prevent wires from flying loose—crimped wire bristles prevent bending or breaking.

Heavy Duty Wheels. Built for heavy duty continuous service on all types of wire brushing jobs.

Standard Duty Wheels. Good quality, light weight brushes for intermittent, all-round use. Strong and durable.

No.	Diam.	Width	Arbor Hole
★ AC-26	6"	1 1/8"	1/2" to 2"
★ AC-27	7"	1 1/4"	1/2" to 2"
★*AC-28	8"	1 3/8"	1/2" to 2"

No.	Diam.	Width	Arbor Hole
★AC-414	4 1/4"	3/4"	1/2"
★ AC-33	6"	3/4"	1/2" to 2"
★*AC-36	12"	1 3/8"	1" to 2"

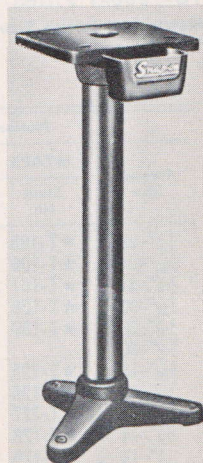
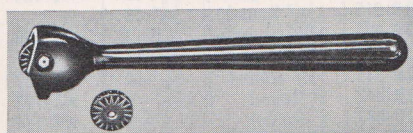
*Available on special order only.
Specify Arbor Size Required

GRINDER PEDESTALS

Mount your bench grinders on a really solid base. Consists of cast top with slot holes to mount grinder, 3-legged base with floor mounting holes and steel tube shaft. Pedestal is 32 1/2" high and is finished in attractive gray color. Shaft can be cut to adjust height.

BGB-30, for 1/2", 3/4", or 1 HP. Grinders. Has coolant bucket cast into the top.

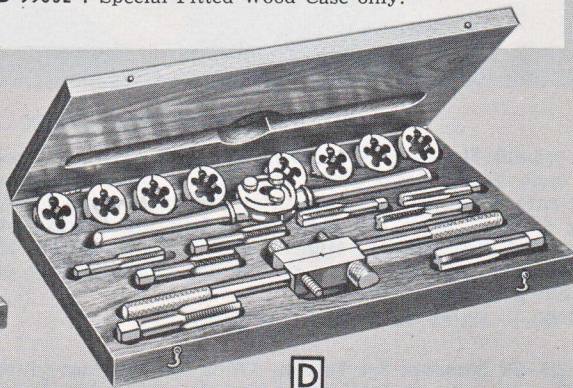
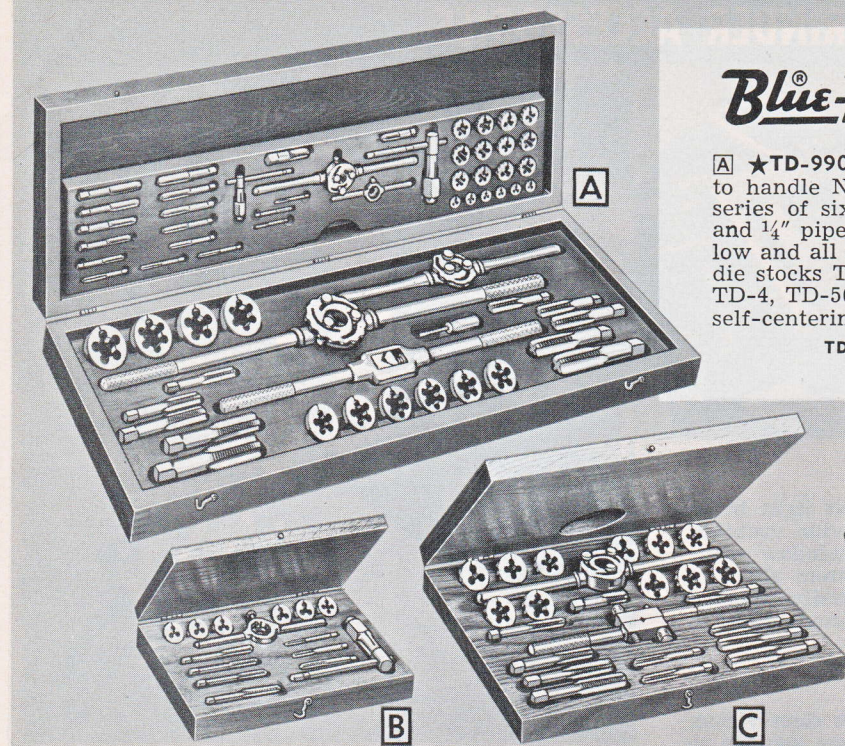
BGB-20, for 1/4 and 1/3 H.P. Grinders. Does not have coolant bucket.



Blue-Point TAPS and DIES

A ★TD-9900E Complete Set—All the taps and dies needed to handle NF and NC threads in 1/4" to 1" diameters, a series of six machine screw sizes 4-36 to 12-24 and 1/8" and 1/4" pipe sizes. The set contains all the taps listed below and all dies except DR-014 and DR-019. Included are die stocks TD-3, TD-10, TD-35, TD-40 and tap wrenches TD-4, TD-50 and TD-98. The three largest die stocks are self-centering. Fitted wood case has removable tray.

TD-9900E-1 Special Fitted Wood Case only.



BLUE-POINT Taps and Dies give you fine, tough thread cutting tools. Dies 1/4" to 1/2" are one-piece, double hex type . . . they can be turned with a one inch socket wrench where regular die stocks cannot be used. Machine screw dies 4-36 to 12-24 are 5/8" hexagon and dies 1/2" to 1" are one-piece circular type. Both types adjust to give a tight or loose fit to your thread—a small adjusting screw changes the nominal die size from .001" to .003" under or over. The three largest die stocks are self-centering and adjust to the diameter of the rod or bolt, insuring an accurate, straight thread . . . prevents dies from breakage due to tilting.

B ★TD-2500 Machine Screw Set. A set of high quality taps and dies to handle those small machine screw threading jobs. Dies are one-piece hexagon type, adjustable from .001" to .003" under or oversize. Includes taps and dies sizes 4-36, 6-32, 8-32, 10-24, 10-32 and 12-24 listed below, and the TD-4 4-Jaw Tap Wrench and TD-3 Die Stock. In fitted wood case.

TD-2500-1 Fitted Wood Case only.

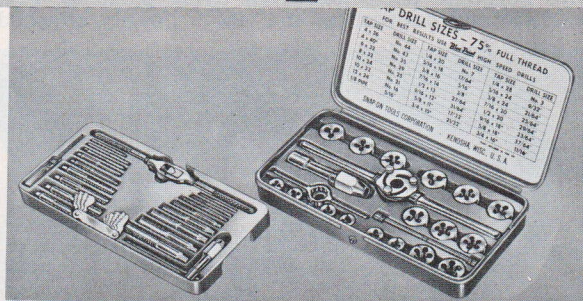
C ★TD-2400A Standard Set. Dies are one-piece double hexagon type and can be used with a 1" socket in close quarters. This popular set contains N. F. sizes 1/4"-28, 5/16"-24, 3/8"-24, 7/16"-20, 1/2"-20; N. C. sizes 1/4"-20, 5/16"-18, 3/8"-16, 7/16"-14, 1/2"-13 and 1/2" pipe thread, together with TD-88 Tap Wrench and TD-10 self-centering Die Stock. In fitted wood case.

TD-2400-1 Fitted Wood Case only.

D ★TD-7800 Intermediate Set. Handles N. F. and N. C. thread sizes 1/2" to 3/4". The dies in this set are one-piece 1 1/2" diameter round type. N. F. sizes are 1/2"-20, 5/16"-18, 3/8"-18, 3/4"-16. N. C. sizes are 1/2"-13, 5/16"-12, 3/8"-11, 3/4"-10. The TD-35 Self-centering Die Stock and TD-20 Tap Wrench complete the set which comes in a sturdy fitted wood case as illustrated.

TD-7800-1 Fitted Wood Case only.

Metric and British Size Tap and Die Sets are on next page.



★TD-2425 Super Set. Light and compact in TD-2425-1 red plastic case with lift-out tray. Contains machine screw sizes 4-36, 6-32, 8-32, 10-24, 10-32, 12-24, N. C. sizes 1/4"-20, 5/16"-18, 3/8"-16, 7/16"-14, 1/2"-13, N. F. sizes 1/4"-28, 5/16"-24, 3/8"-24, 7/16"-20, 1/2"-20, also 1/2" pipe thread. Also includes TD-10 Die Stock, TD-3 Die Stock, TD-4 "T" Tap Wrench, TD-50 "T" Tap Wrench, TD-88 Tap and Reamer Wrench, TD-1040 Screw Pitch Gauge and Screw Driver.

TD-2425-1 Plastic case and tray only.

DIE STOCK AND TAP WRENCHES

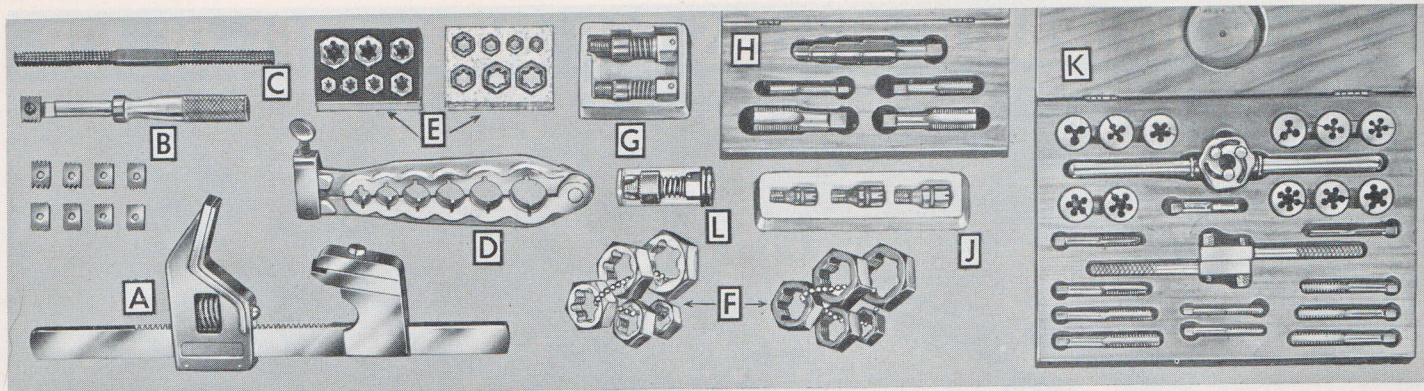
TD-3	Die Stock	For hexagon dies 4-36 to 12-24
TD-10	Die Stock	Self-centering for 1" diam. hex dies
TD-35	Die Stock	Self-center for 1 1/2" diam. round dies
TD-40	Die Stock	Self-center for 2" diam. round dies
TD-4	Tap Wrench	4-jaw chuck for 6-32 to 10-32 taps
EH-40	Tap Wrench	2-jaw chuck, for 1/4" to 1/2" taps
EH-50	Tap Wrench	2-jaw chuck, for 1/2" to 3/4" taps
TD-50	Tap Wrench	4-jaw chuck, for 1/4" to 1/2" taps
TD-88	Tap Wrench	Clamp-type, for 1/4" to 1/2" taps
TD-98	Tap Wrench	Adj. clamp-type for 1/2" to 1" taps

Blue-Point TAPS AND DIES

National Fine Sizes				National Coarse Sizes				Machine Screw Sizes			
Thread Size	★TAPS		★DIES	Thread Size	★TAPS		★DIES	Thread Size	★TAPS		★DIES
	Stock No.	Type			Stock No.	Type			Stock No.	Type	
1/4"-28	★T-105	1" Hexagon	★D-015	1/4"-20	★T-100	1" Hexagon	★D-010	4-36	★T-111	5/8" Hexagon	★D-021
5/16"-24	★T-106	1" Hexagon	★D-016	3/8"-18	★T-101	1" Hexagon	★D-011	6-32	★T-112	5/8" Hexagon	★D-022
3/8"-24	★T-107	1" Hexagon	★D-017	1/2"-14	★T-102	1" Hexagon	★D-012	8-32	★T-113	5/8" Hexagon	★D-023
7/16"-20	★T-108	1" Hexagon	★D-018	1/2"-13	★T-103	1" Hexagon	★D-013	10-24	★T-114	5/8" Hexagon	★D-024
1/2"-20	★T-109	1" Hexagon	★D-019	5/8"-11	★T-104	1" Hexagon	★D-014	10-32	★T-115	5/8" Hexagon	★D-025
1/2"-20	★T-125	1 1/2" Round	★DR-019	3/4"-10	★T-120	1 1/2" Round	★DR-014	12-24	★T-116	5/8" Hexagon	★D-026
5/8"-18	★T-126	1 1/2" Round	★DR-035	1"-8	★T-121	1 1/2" Round	★DR-030				
3/4"-16	★T-127	1 1/2" Round	★DR-036		★T-122	1 1/2" Round	★DR-031				
7/8"-14	★T-128	2" Round	★DR-037		★T-123	1 1/2" Round	★DR-032				
1"-14	★T-129	2" Round	★DR-042		★T-124	2" Round	★DR-040				
			★DR-043				★DR-041				

Pipe Sizes

1/8"	★T-110	★D-020	1" Hexagon
1/4"	★T-130	★D-040	1" Hexagon



RE-THREADING TOOLS RESTORE BATTERED AND DAMAGED THREADS LIKE NEW

UNIVERSAL RETHREADING TOOLS

A ★**TR-20A External Rethreading Set.** Here is a rethreading set that will handle practically all rethreading work you'll run across and do a fast job of restoring it to original condition.

The tool has a capacity of 1/2" to 5" diameter for bolt threads and 1/4" to 4" for pipe threads. Eight chasers with two sizes each are included with the TR-20A to recut threads from 4 to 24 pitch. The TR-20-19 chaser is available as an additional unit. Chasers are machined from the highest quality tool steel and are carefully heat treated to assure long wearing cutting edges. A metal ring is provided for convenience in holding the chasers.

The chaser holding bracket of the tool is so designed that threads can be recut right up to a beveled edge or square shoulder. The adjustable jaw has a liner of soft brass to protect the threads from further damage while being recut. This liner is subject to hard wear but it can be easily replaced.

★**TR-20-5 Soft Brass Liner**

Chasers—Stock No. and Thread Pitch

★ TR-20-10 4 & 5	★ TR-20-14 11 1/2 & 12
★ TR-20-11 6 & 7	★ TR-20-15 13 & 14
★ TR-20-12 8 & 9	★ TR-20-16 16 & 18
★ TR-20-13 10 & 11	★ TR-20-17 20 & 24
★ TR-20-19 4 1/2 & 7 1/2 threads. The 7 1/2 side is for fire hose fittings.	

B INTERNAL THREAD CHASER HOLDER

An especially handy tool for restoring internal threads and a companion to the TR-20 set listed above. This internal thread restorer makes use of the same seven chasers TR-20-11 to -17 listed above. Unit is made of steel with a knurled handle for firm grip as shown. Chaser is held by threaded screw in end of stem. Plated and smoothly finished.

B **TR-25-1 Internal Thread Chaser Holder.**

★**TR-25A Internal Thread Chaser Set.** Consists of TR-25-1 Internal thread chaser holder, and thread chasers (listed above), TR-20-10, 11, 12, 13, 14, 15, 16 and 17.

★**TR-30A Thread Restorer Set.** Consists of the TR-20A External Rethreader Set plus the TR-25-1 Internal Thread Chaser Holder.

THREAD RESTORERS

C A few strokes across battered threads, produce a true new thread—nut will then go on easily. Each tool has 8 thread sizes.

★**TF-1124** Has 11, 12, 13, 14, 16, 18, 20, and 24 threads to the inch.

★**TF-1127** Has 9, 10, 15, 16, 20, 26, 28, and 32 threads to the inch.

AXLE RETHREADING TOOL

D ★**AR-6A Axle Rethreader.** Here is a tool that does a fast job of restoring battered axle threads. Though very compact it contains the six most popular axle thread sizes in use. Tool is placed around the axle where the thread is still in good condition. The end clamp holds the two pieces securely in place while the tool is worked over the damaged part to restore it to its original condition. Contains the following sizes: 5/8"-18, 3/4"-16, 7/8"-14, 1"-14, 1 1/8"-12 and 1 1/4"-12.

E RETHREADING DIE SETS

You can remove nicks and burrs and have clean, properly fitting studs and cap screws in just a few seconds time. These two sets of rethreaders are manufactured to the new American Bolt and Nut Industries Standards so that the same size wrench that removes the nut will also fit the hex shaped rethreader die. For easy identification, the fine thread series have natural finish and the coarse thread series a copper finish. These dies are built for chasing work only and not for cutting new threads.

★**TRC-7A Rethreader Kit.** Consists of the seven National Coarse sizes listed below.

★ TR-2520Chaser	3/4" x 20 thread
★ TR-3118Chaser	5/16" x 18 thread
★ TR-3716Chaser	3/8" x 16 thread
★ TR-4314Chaser	7/16" x 14 thread
★ TR-5013Chaser	1/2" x 13 thread
★ TR-5612Chaser	9/16" x 12 thread
★ TR-6211Chaser	5/8" x 11 thread

★**TRF-7A Rethreader Kit.** Contains the seven National Fine sizes listed below.

★ TR-2528Chaser	3/4" x 28 thread
★ TR-3124Chaser	5/16" x 24 thread
★ TR-3724Chaser	3/8" x 24 thread
★ TR-4320Chaser	7/16" x 20 thread
★ TR-5020Chaser	1/2" x 20 thread
★ TR-5618Chaser	9/16" x 18 thread
★ TR-6218Chaser	5/8" x 18 thread

F RETHREADING DIE SETS FOR LARGER SIZE BOLTS

Similar to the Nos. TRC-7A and TRF-7A above. Each set is equipped with a flexible, heavy-duty ball link chain for keeping individual dies together to prevent loss.

★**TRC-5 Rethreader Set.** Copper finish. Consists of the five National Coarse sizes listed below:

★ TR-7510Chaser	3/4" x 10 thread
★ TR-8759Chaser	7/8" x 9 thread
★ TR-10008Chaser	1" x 8 thread
★ TR-11257Chaser	1 1/8" x 7 thread
★ TR-12507Chaser	1 1/4" x 7 thread

★**TRF-5 Rethreader Set.** Natural finish. Consists of the five National fine sizes listed below:

★ TR-7516Chaser	3/4" x 16 thread
★ TR-8714Chaser	7/8" x 14 thread
★ TR-10014Chaser	1" x 14 thread
★ TR-11212Chaser	1 1/8" x 12 thread
★ TR-12512Chaser	1 1/4" x 12 thread

SPARK PLUG HOLE RECONDITIONERS

Designed to clean both the spark plug hole threads and the spark plug seat in one quick operation. Have threaded portion on one end, a 1 3/16" hex shape on opposite end and have a spring loaded, serrated section at top of threaded section. A heavy duty spring keeps tension on this serrated section and insures thorough cleaning job on spark plug seat as tool is threaded into the hole. Three equally spaced grooves in threaded section loosen and collect dirt and chips. The friction ball in hex end secures tool to socket.

TCS-14 Spark Plug Hole Reconditioner for 14MM holes encountered on GM, Chrysler products and others. Length 2 1/16".

TCS-18 Spark Plug Hole Reconditioner for 18MM holes encountered on Ford family line products and others. Length 2 5/8".

G **TCS-1418 Spark Plug Hole Reconditioner**
Set contains one of each of the above packed in an attractive formed plastic box with transparent sleeve type cover and instructions.

L **TCS-875 7/8"-18 Spark Plug Hole Reconditioner.** Comes in a protective transparent plastic case.

SPARK PLUG TAP SET

H Quickly repairs damaged threads in aluminum heads. If the threads are badly stripped it may be necessary to re bore the hole with the counterboring tool and rethread for the next size spark plug. The MCB-3 Counterbore will ream a 10 mm. hole to a 14 mm., a 14 mm. to 18 mm., and an 18 mm. to a 1/4". The counterbore may be turned with a wrench or electric drill.

★**TDM-13 Spark Plug Set.** Four Spark Plug Taps and Counterbore tool in TDM-11-1 fitted wood case as illustrated.

★**TDM-11 Set of Four Spark Plug Taps.** In box.

★**MCB-3 Counterbore.**

★ T-10100	10mm x 1.00 Tap
★ T-14125	14mm. x 1.25 Tap
★ T-18150	18mm. x 1.50 Tap
★ T-2818	7/8" x 18 N.F. Tap
TDM-11-1 Fitted Wood Case only.	

INVERTED FITTING CHASER SET

J ★**TDC-3 Chaser Set.** Designed to retap and rethread tube fittings of the inverted flared type. By restoring damaged threads in these units you can save yourself the time required to remove the old fitting, replacing with a new one and then refitting the tube. The three sizes below fit most hydraulic brake lines as well as some gas and oil lines in use on present day cars. Set contains 3 sizes as listed:

★ TDC-1224	3/8" - 24 Chaser
★ TDC-1424	7/16" - 24 Chaser
★ TDC-1620	1/2" - 20 Chaser

K METRIC AND WHITWORTH TAP AND DIE SETS

★**TDM-109A Metric Set.** Contains 9 sizes of taps and dies listed below. TD-88 Tap Wrench, TD-10 Die Stock, in TDM-109-1 fitted wood case.

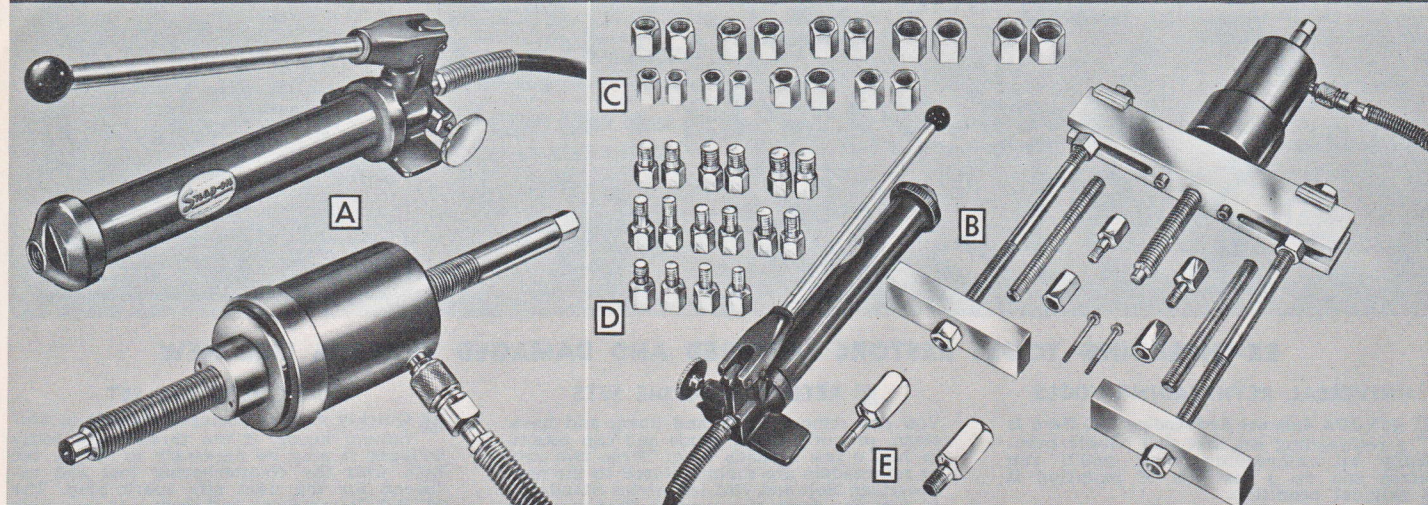
TDM-109-1 Fitted Wood Case only.

Stock Nos.		Size
Taps	Dies	
★ T-407M	★ D-407M	4-.70
★ T-508M	★ D-508M	5-.80
★ T-610M	★ D-610M	6-1.0
★ T-710M	★ D-710M	7-1.0
★ T-812M	★ D-812M	8-1.25
★ T-912M	★ D-912M	9-1.25
★ T-1015M	★ D-1015M	10-1.50
★ T-1115M	★ D-1115M	11-1.50
★ T-1217M	★ D-1217M	12-1.75

★**TDW-111A Whitworth and British Standard Set.** Contains 11 sizes of taps and dies listed below. TD-88 Tap Wrench, TD-10 Die Stock, in TDW-111-1 fitted wood case.

TDW-111-1 Fitted Wood Case only.

Stock Nos.		Size
Taps	Dies	
★ T-2520W	★ D-2520W	1/4"-20 Whitworth
★ T-3118W	★ D-3118W	5/16"-18 Whitworth
★ T-3716W	★ D-3716W	3/8"-16 Whitworth
★ T-4314W	★ D-4314W	7/16"-14 Whitworth
★ T-5012W	★ D-5012W	1/2"-12 Whitworth
★ T-125WP	★ D-125WP	1/8" Pipe
★ T-2526W	★ D-2526W	1/4"-26 B. S. F.
★ T-3122W	★ D-3122W	5/16"-22 B. S. F.
★ T-3720W	★ D-3720W	3/8"-20 B. S. F.
★ T-4318W	★ D-4318W	7/16"-18 B. S. F.
★ T-5016W	★ D-5016W	1/2"-16 B. S. F.



RAM, PUMP, HOSE & COUPLER

A CG-420 Set consists of the Ram, Pump, Hose and Quick Coupler assembly as shown, ready for attaching to the pullers shown on this page and the floor press shown on the opposite page. It is a complete power assembly ready to go to work. It is a 20 ton hydraulic, hollow center ram and pump which can be adapted to hundreds of applications in the mechanical and industrial fields for pushing, pulling and pressing, quickly, safely and efficiently.

THE RAM is 4" in diameter and 6" long. It has a 2" stroke and is equipped with spring return which brings plunger back when pressure is released. Ram is threaded for attachment to various yokes and adaptors. Ram and adaptor can be used on the outside of a puller yoke—an exclusive feature—that provides an additional 6" longer reach. This also places yoke closer to work which prevents bucking or rolling during operation. Has 4 tapped holes on bottom to facilitate mounting to attachments, fixtures, floor press and for production applications.

THE PUMP is hand operated, single stage, single action with .172 cubic inch displacement per stroke. It is equipped with an accumulator sack which allows pump operation in any position, eliminates back pressure and helps keep oil free from contamination. Ball type valves are used and valve seats are replaceable which greatly increases life of pump. The cylindrical pump measures 2 1/4" diameter and is 16 1/2" long. The 18 1/4" handle provides ample leverage for easy pump operation. A pressure release screw releases all pressure in pump, ram and hose. Hose is 12 feet long.

CG-420-5 Pressure Gauge. Used with CG-420 Set when used as a press. Shows amount of pressure applied. 3 1/2" dial, 40 graduations from 0-20 tons.

CG-420-6 Gauge Adaptor. For attaching gauge to ram.

EVEN PULLING POWER TO LOOSEN THE TIGHTEST GEAR

CG-400 Puller uses our standard 300-3 jaws with a combination yoke (CG-400-2) with a locking plate and studs which thread directly to the ram. The yoke is of 2-jaw and regularly spaced 3-jaw design with provision for specially spaced 3-jaw operation for use on 5-spoked gears and wheels. This yoke has all the locking and safety features of our standard CG-type pullers. Pulled has a reach of 9 1/2" and spread of 13". The CG-400 Puller consists of the following:

One CG-400-2 Combination Yoke	Four CG-400-6 Springs
Three CG-300-3 Jaws	Four CG-400-7 Adj. Studs
One CG-400-5 Locking Plate	

A CG-400HY Hydraulic Puller Set consists of the CG-420 Ram, Pump, Hose and Quick Coupler assembly and the CG-400 Puller.

CG-405 Puller Same as the CG-400 except it has the CG-305-9 jaws to provide 14" reach and 15" spread.

B CG-405HY Hydraulic Puller Set consists of CG-420 Ram, Pump, Hose and Coupler assembly and CG-405 Puller.

HEAVY DUTY BAR-TYPE PULLER HAS MANY USES

CG-450 Heavy Duty Bar-Type Puller. Pulls parts with openings or tapped holes a minimum of 6" apart. Adaptors are included which have 7/8"-14 internal threads to fit side rods and 5/8"-18 external threads to fit tapped holes in CJ-951 and CJ-952 bearing separators. The CG-450 consists of the following parts:

Two CG-350-3 Long Side Rods
Two CG-350-4 Short Side Rods
Two CG-350-5 Side Rod Connecting Nuts
Two CG-350-6 2 1/2 x 1 1/4 Adaptor Blocks
Six CG-350-7 7/8" Hex Nuts
Two CG-350-8 Slip Washers
Two CG-350-9 Bearing Separator Adaptors
One CG-450-10 Hydraulic Yoke
Two CG-450-11 1 1/2"-13 x 3/4" Socket Head Cap Screws
Two CG-450-12 5/16"-18 x 3" Cap Screws
One CG-425-9 Ram Adaptor

B CG-450HY Complete Puller Set consists of CG-420 Ram, Pump, Hose and Coupler Assembly and CG-450 Puller (above).

Available for use with the CG-450 Puller is the CG-455 Set of Male Adaptors for use when a tapped gear or wheel is to be

pulled, and for pressing when tapped holes surround the piece being worked on. Also, the CG-455A Set of Female Adaptors, used when studs surround the piece to be pulled. Also, two Pressure Screw Adaptors, CG-455-18 and CG-455-19 for hook-ups where the CG-450 must be used as a "pusher" so that the Power Ram Screw "pulls."

C MALE SIDE ROD ADAPTORS— Two of Each Shown

CG-455-1 5/8"-18	CG-455-5 7/8"-9
CG-455-2 5/8"-11	CG-455-6 1"-14
CG-455-3 3/4"-16	CG-455-7 1"-8
CG-455-4 3/4"-10	CG-455-8 1 1/8"-12

CG-455 Set of 16 Adaptors (two of each).

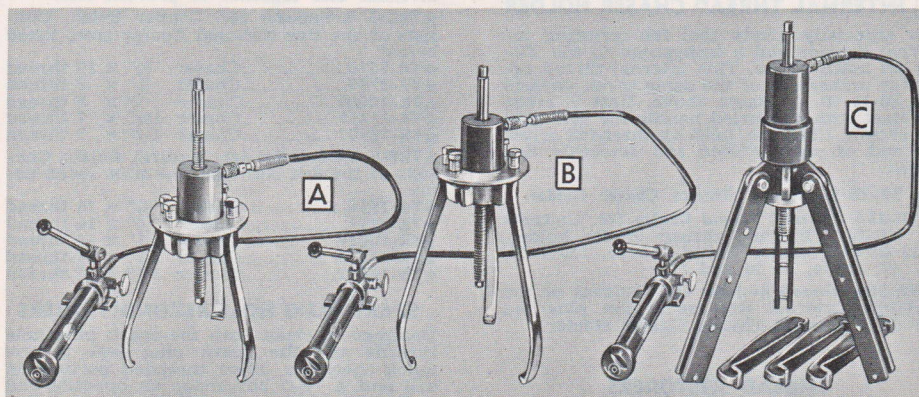
D DOUBLE FEMALE ADAPTORS— Two of Each Shown

CG-455-9 5/8"-18	CG-455-13 1 1/8"-12
CG-455-10 3/4"-16	CG-455-14 1 1/4"-8
CG-455-11 1"-14	CG-455-15 1 1/4"-12
CG-455-12 1 1/8"-8	CG-455-16 1 1/2"-8
	CG-455-17 1 1/2"-12

CG-455A Set of 18 Adaptors (two of each).

E CG-455-18 5/8"-18 Pressure Screw Adaptor.

E CG-455-19 7/8"-14 Pressure Screw Adaptor.



EXTRA HEAVY DUTY PULLER FOR THOSE TOUGH JOBS

CG-425 Puller has adaptors which allow the ram to be attached to the yoke for various pulling operations. This Puller will handle gears and pulleys up to 20" diameter and has a reach of 19". Adaptable as either a 2-jaw or 3-jaw puller. Yokes and jaws are heat treated malleable iron, comparable in strength to heat treated alloy forgings. The CG-425 Puller consists of the following:

One CG-325-2 Yoke	Three CG-325-5 Arm Bolts
Three CG-325-3 Jaws	Three CG-325-6 Side Arms
Three CG-325-4 Side Arms	One CG-425-7 Washer Adaptor
Two CG-425-8 1/2"-13x4 1/2" Socket head cap screws	
One CG-425-9 Ram Adaptor	

C CG-425HY Hydraulic Puller Set consists of the CG-420 Ram, Pump, Hose and Quick Coupler assembly and the CG-425 Puller. Adaptors are required to adapt ram to puller or puller to part being worked on. CG-425-9 Adaptor used for mounting ram on top of puller. This allows closer hook-up for pulling and reduces danger of rolling. CG-425-7 Adaptor is used as retainer with the CG-425-9 when adapting ram to CG-425 puller.

FLOOR PRESS DELIVERS 20 TONS OF POSITIVE POWER

CG-470-HY Complete Floor Press Set. Consists of the CG-470A Floor Press Set and the CG-420 Ram, Pump, Hose and Quick Coupler assembly described on opposite page. Ruggedly constructed of 5" channel iron, well proportioned to deliver maximum power of ram for unlimited operations in garage or industrial shops such as bending, straightening, assembly and other pressing applications. Overall height is 5 feet, requires only 2' x 3' floor space, well balanced on heavy angle iron feet. Minimum distance between adjustable work rails and ram (ram in closed position) is 3", maximum distance is 40 3/4". Work rails may be raised or lowered in 3" increments.

CG-470A Floor Press Set. Consists of the following units and mounting parts:

CG-470 Press Frame only
CG-470-12 Work Block (2)

Mounting Parts

CG-470-13 Ram Back Plate
CG-470-14 Back Plate Gibs (2)
CG-470-15 Gib Cap Screws (4)
CG-470-16 Pump Bracket Assembly
CG-470-17 5/16" x 1 1/2" Cap Screw (4)

The ram and pump are easily assembled to the press frame using these Mounting Parts. Ram is attached to the frame using the 4 cap screws through the ram back plate. Four bolts secure the back plate to the head rails. This back plate with ram can be moved from side to side along head rail to desired position and locked in place to accommodate various shaped work.
Note: The CG-470A Set does not include the CG-420 Ram, Pump, Hose and Coupler Assembly.

F CG-470-12 Work Blocks. These husky blocks slide from side to side of the press for proper location under the ram on the work rails and are held in alignment by the extended boss at the bottom. Two required.

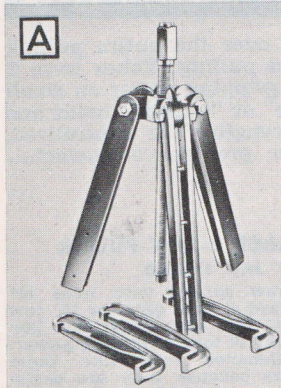
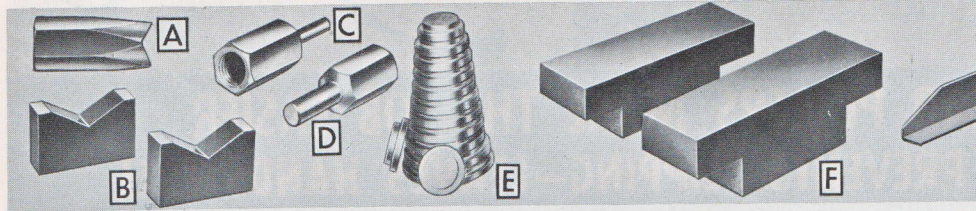
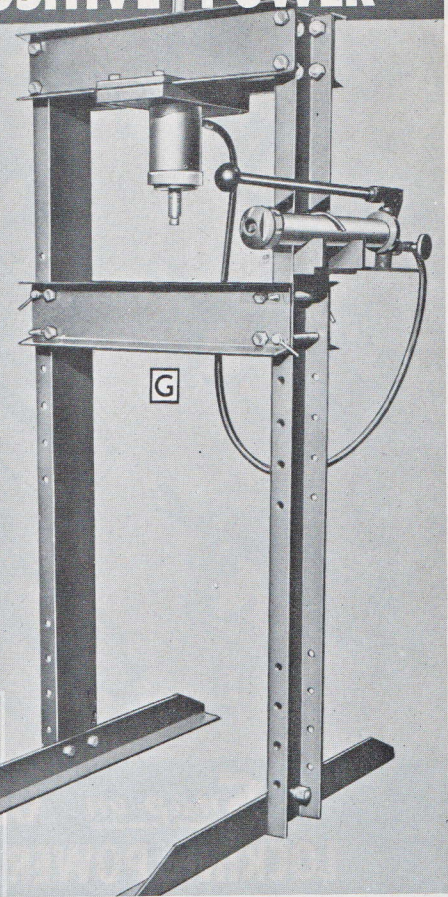
USEFUL ACCESSORIES FOR PRESS

A CG-471-1 Pressure Screw Vee Adaptor
B CG-471-2 Vee Block (2 Required)
C CG-471-3 1/2" Pressure Screw Adaptor
D CG-471-4 3/4" Pressure Screw Adaptor

STEP PLATES

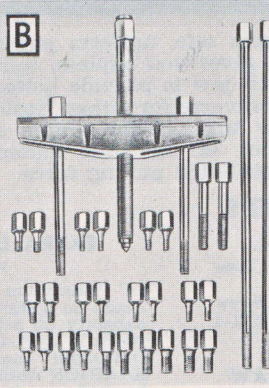
CG-471-5 1 5/8" x 1 1/4"	CG-471-12 2 5/8" x 2 1/8"
CG-471-6 1 3/4" x 1 3/8"	CG-471-13 2 3/4" x 2 1/4"
CG-471-7 1 7/8" x 1 1/8"	CG-471-14 2 7/8" x 2 3/8"
CG-471-8 2 1/16" x 1 5/8"	CG-471-15 3" x 2 1/2"
CG-471-9 2 3/16" x 1 3/4"	CG-471-16 3 1/4" x 2 3/4"
CG-471-10 2 5/16" x 1 7/8"	CG-471-17 3 1/2" x 3"
CG-471-11 2 7/16" x 2"	

CG-471 Complete Set of above 18 items.



A EXTRA HEAVY DUTY PULLER

CG-325 Puller. Handles gears and pulleys up to 20" diameter and has a reach of 20". Is adaptable as a three-jaw or two-jaw puller. Yokes and jaws are heat treated malleable iron, comparable in strength to heat treated alloy forgings. The 1 3/8" diameter screw has a hexagon head which fits any 1 1/2" wrench. Jaws hook into any of three positions on the arms, once set properly on the job they grip tighter with each turn of the pressure screw. This rugged tool develops a gradual build-up of up to 25 tons of pulling power to pull tough jobs without sledge blows and shocks which might damage machinery.



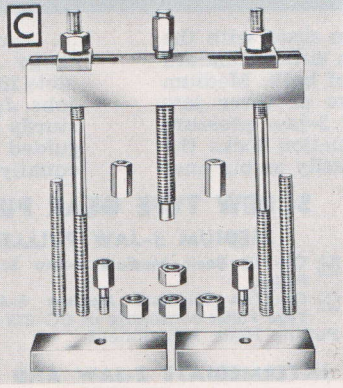
B UNIVERSAL SLOTTED YOKE PULLER

Useful in any shop or industrial plant for pulling tapped bearings, pulleys, gears, etc. The pulling studs have 5/8"-18 internal threads in the hex heads and 5/8"-18 external threads on the bolt end. To provide extra long reach, two or more studs can be screwed together to provide a strong, rigid pulling unit. . . studs can also be screwed into the CJ-951 and CJ-952 Bearing Separators for added usefulness.

Studs are furnished in 3 lengths and a 7/8" wrench fits the hex heads. Yoke is 12" long and is heavily constructed to provide strength to the arms which are slotted close to the screw hole to give a wide adjustment range.

Threaded adaptors screw onto the pulling studs and fit a wide range of tapped holes. The internally threaded hex heads fit a 7/8" wrench.

Pressure Screw is 1 3/8" long . . . it has a 1 1/8" hex head with removable bar handle and a separate centering adaptor for use on shaft with centering hole.



CJ-84C Basic Slotted Yoke Puller. Consists of following parts:

CJ-84-1B Slotted Yoke
CJ-84-4 13" Pressure Screw
CJ-84-A-2 10" Stud (2 incl.)
ESD-1021 Washer (2 incl.)
CJ-84-16 Centering Adaptor

CJ-840C Universal Slotted Yoke Puller. Consists of the CJ-84C Set above and all other additional parts listed below.

Additional Parts

CJ-84-3 20" Stud (2 incl.)	CJ-84-10 3 3/4" - 16
CJ-84-5 5" Stud (2 incl.)	CJ-84-11 1 1/2" - 13
Adaptors 2 of each included	CJ-84-12 5/8" - 11
CJ-84-6 5 1/8" - 24	CJ-84-17 5/8" - 18
CJ-84-15 5 1/8" - 18	CJ-84-13 3/4" - 16
CJ-84-7 3/8" - 24	CJ-84-14 3/4" - 10
CJ-84-8 7/16" - 20	
CJ-84-18 7/16" - 14	
CJ-84-9 1/2" - 20	

Snap-on HEAVY DUTY PULLERS

C HEAVY BAR-TYPE PULLER

Provides up to 50 tons of power. The yoke is 2 1/2" square stock 16" long, grooved to permit pulling objects with openings or tapped holes a minimum of 6" apart, center to center. The side rods are threaded at both ends for greater ease in setting up the puller. Rods can be joined by means of the special connecting nuts to provide longer reach. To increase the rigidity of the side rods and to make the unit adaptable for pushing or pulling, an extra set of nuts is included which can be threaded on the rods to contact the underside of the yoke. Tightening the top nuts then locks the rods and yoke together.

For pulling large spoke wheels, etc., 2 adaptor blocks 8" x 2 1/2" x 1 1/4" are slid over the rods and held in position in back of the wheel by 2 nuts. This puller can also be used in combination with our CJ-951 and CJ-952 bearing separators. Adaptors are included that have 7/8"-14 internal threads to fit the side rods and 5/8"-18 external threads to fit the tapped holes in these bearing separators. Pressure screw hex head fits a 1 1/4" wrench.

CG-350 Heavy Duty Bar Type Puller. Consists of the parts listed below and illustrated above. Weight 50 lbs.

CG-350-1 Pressure Screw, 1 1/8"-12 thread

CG-350-2 Yoke

CG-350-3 Long Side Rod (2 required)

CG-350-4 Short Side Rod (2 required)

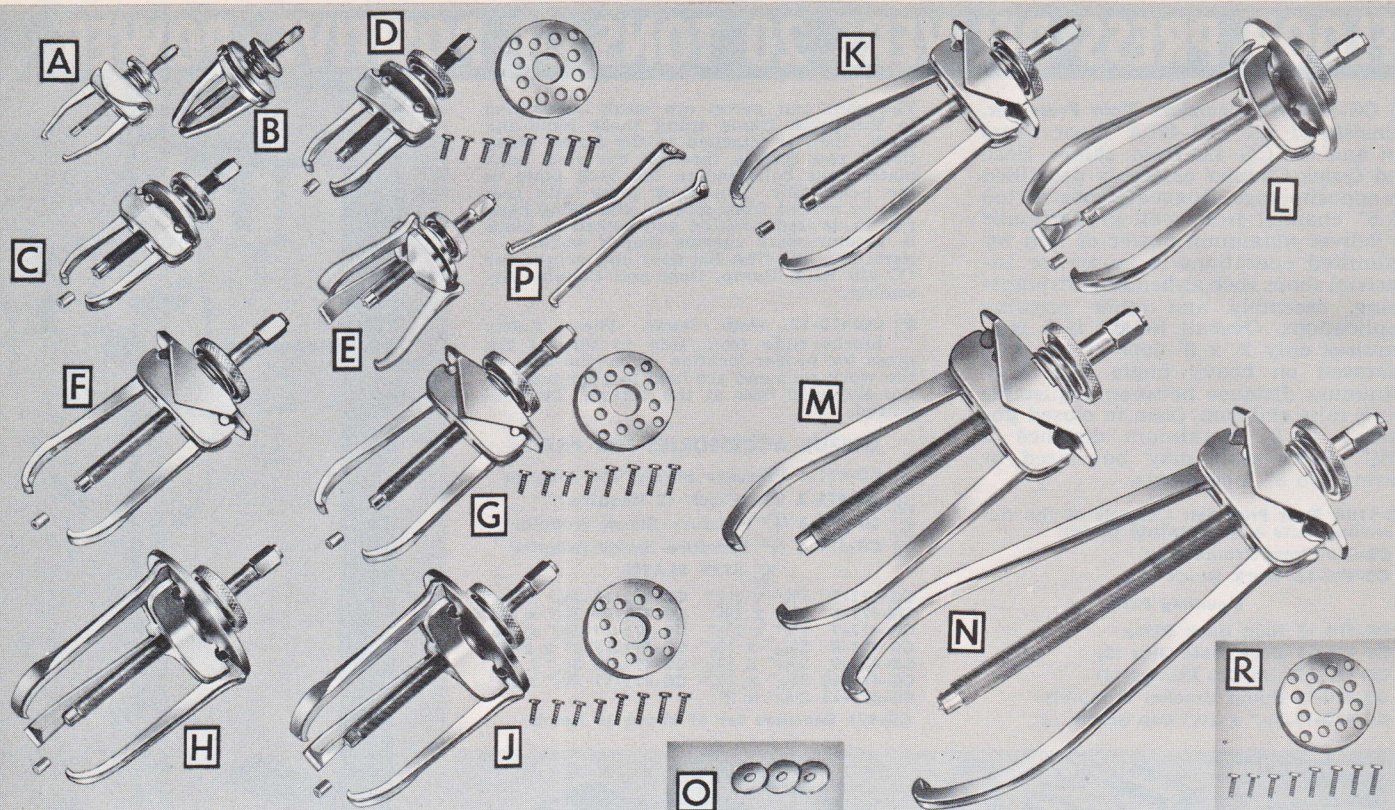
CG-350-5 Side Rod Conn. Nut (2 required)

CG-350-6 Adaptor Block (2 required)

CG-350-7 7/8" Hex Nut (6 required)

CG-350-8 Clip Washer (2 required)

CG-350-9 Bearing Separator Adaptor (2 req.)



Snap-on GEAR PULLERS MAKE THE JOB EASIER LOCKING POWER PREVENTS SLIPPING—LEAVES HANDS FREE

SEVEN SIZES OVER ENTIRE POWER RANGE—2-JAW AND 3-JAW SCREW AND SLIDE HAMMER TYPES

SNAP-ON Gear Pullers are offered in seven sizes, with the dwarf, small and medium models available in either standard or slide hammer type or as a combination of both. Medium and intermediate sizes are available in two or three jaw models. Larger model pullers are made in 2-jaw pressure screw type only. The yoke and jaw construction locks the jaws onto the job . . . pulls small gears as easily as big ones

. . . produces safe, uniform power over the entire pulling range . . . gives you slipless, tipless pulling. Yokes have 2 slots in each jaw to provide better gripping power on small jobs. Jaws reverse for either "inside" or "outside" holds and sturdy jaw tips provide ample strength. The centralized, guided shock of the slide hammer provides a powerful, equally distributed pulling force.

SCREW TYPE GEAR PULLERS

MEDIUM 3-JAW PULLERS

- CG-273 Basic Medium 3-Jaw Screw Type Puller.
- CG-273A Standard Medium 3-Jaw Screw Type Puller consisting of CG-273 and CG-1 Pulling Plate Attachment.

INTERMEDIATE 2-JAW AND 3-JAW PULLERS

10" JAW SPREAD

10" maximum jaw spread on outside holds with a reach of 8 1/4". When the 2-Jaw model is used for inside holds, jaws may be inserted through 3" hole. The pressure screw is 11 3/4" long with a 3/4" hex head. The CG-270-8 Slide Screw Bar, 66-2 Slide Hammer and the 10-F Cross Bar may be added to these pullers to convert them into slide-hammer type tools.

INTERMEDIATE 2-JAW PULLER

- CG-280 Intermediate 2-Jaw Screw Type Puller.

INTERMEDIATE 3-JAW PULLER

- CG-283 Intermediate 3-Jaw Screw Type Puller.

LARGE 2-JAW PULLER

12" JAW SPREAD

12" maximum jaw spread with 9 1/2" reach on outside hold. On inside pulls the jaws operate through a 3 1/2" opening. Its 20 ton power capacity makes this puller the favorite for those big, tough jobs. The most stubborn gears and pulleys are loosened without damage to any of the units. Pressure screw has 1" hex head for turning with standard wrench.

- CG-300 Large 2-Jaw Screw Type Puller.

EXTRA LARGE 2-JAW PULLER

15" JAW SPREAD

14" maximum jaw spread with over 14" reach on a standard 4" face gear—or 16" jaw capacity on a 3 1/2" face gear. Maximum jaw reach is 14 3/4". Over 20 tons of pulling power. Industrial maintenance men like these SNAP-ON Pullers because they are easily hooked up to the job and because they work quickly, surely and safely. Pressure screw has 1" hex head so it may be turned with standard wrench.

- CG-305 Extra Large 2-Jaw Screw Type Puller.

SCREW POINT PROTECTORS

These Protectors fit over the tapered point of the puller pressure screw and prevent it from being damaged when puller is used on a shaft without a center hole. Three sizes for different diameter pressure screws are available.

- CG-10 Set of 3 Protectors.
- CG-6 9/16" diameter Protector.
- CG-7 3/4" diameter Protector.
- CG-8 1 1/8" diameter Protector.

LONG JAWS FOR INSIDE PULLING

★CG-250-10 Long Jaw. Interchangeable on the CG-250, CG-270 and CG-273 Series Pullers for inside pulling of bearings, bushings, etc. They "lock on" for inside holds up to 8" in diameter and will reach into a 3/4" opening to a depth of 3" before binding. Also useful for light work on outside holds. These jaws are 7 1/2" long.

PULLING PLATE ATTACHMENT

★CG-1 Pulling Plate Attachment. Complete with four each 1/4"-20 and 1/4"-28 bolts. Bolts are inserted through plate into tapped gear holes, etc., and puller jaws clamp behind the plate.

DWARF 2-JAW AND 3-JAW PULLERS

3" JAW SPREAD

3" maximum spread on outside holds. Jaw reach is 2 1/2". For 1/2" diameter bearings use only one jaw locked in inside yoke slot. Screw has hex head but no cross bar.

- CG-240 Dwarf 2-Jaw Screw Type Puller.
- CG-243 Dwarf 3-Jaw Screw Type Puller.

SMALL 2-JAW AND 3-JAW PULLERS

4 1/2" JAW SPREAD

4 1/2" maximum spread on outside holds. Jaw reach is 3". Operate through 1 1/2" openings for inside holds. Power capacity 6 tons. Pressure screw hex head fits 5/8" wrench, pointed screw tip centers on turned shafts. A screw tip protector is included.

- ▲ ■ CG-250 Basic Small 2-Jaw Screw Type Puller.
- CG-250A Standard Small 2-Jaw Screw Type Puller consisting of CG-250 and CG-1 Pulling Plate Attachment.
- CG-253 Small 3-Jaw Screw Type Puller.

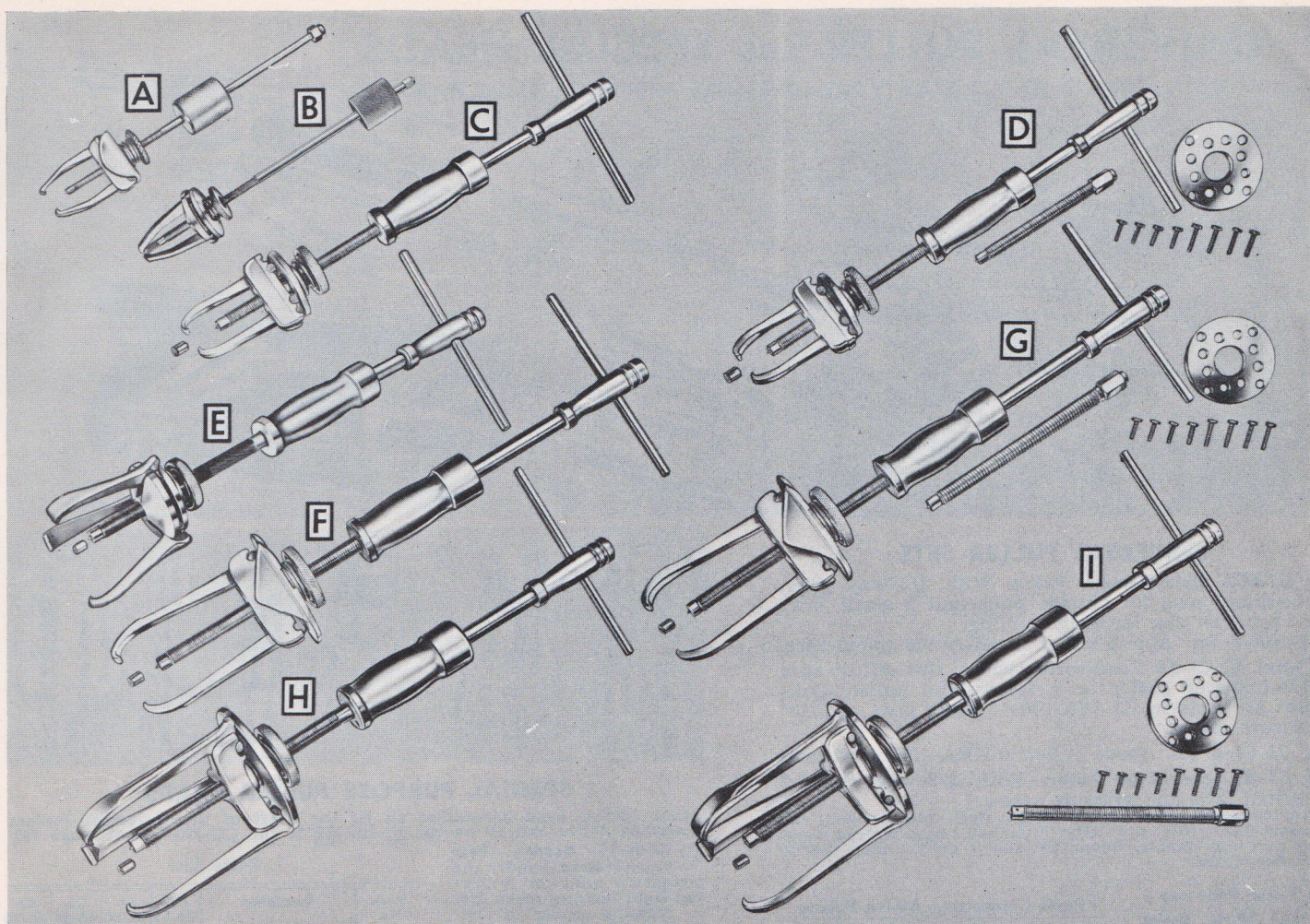
MEDIUM 2-JAW AND 3-JAW PULLERS

8 1/2" JAW SPREAD

8 1/2" maximum jaw capacity on outside holds. Jaw reach is 5 1/2". Operate through 2 1/2" opening for inside pulls. 10 ton power capacity. With exception of yokes and locking plates, all parts of the 2-Jaw and 3-Jaw models are identical. Pressure screw has 3/4" hex head and end tip. Tip protector is included.

MEDIUM 2-JAW PULLERS

- ▲ ■ CG-270 Basic Medium 2-Jaw Screw Type Puller.
- CG-270A Standard Medium 2-Jaw Screw Type Puller consisting of CG-270 and CG-1 Pulling Plate Attachment.



SLIDE-HAMMER PULLERS GIVE IMPACT TO LOOSEN TIGHTEST GEARS OR PULLEYS

DWARF 2-JAW and 3-JAW SLIDE-HAMMER PULLERS 3" JAW SPREAD

3" maximum spread on outside holds. Jaw reach is 2½". For ½" diameter bearings use only one jaw locked in inside yoke slot. Works through ⅞" opening for inside pulls.

- A** CG-240H Dwarf 2-Jaw Slide Hammer Type Puller.
- B** CG-243H Dwarf 3-Jaw Slide-Hammer Type Puller.

SMALL 2-JAW and 3-JAW SLIDE-HAMMER PULLERS 4½" JAW SPREAD

4½" maximum spread on outside holds. Max. jaw reach is 3". Operate through 1½" openings for inside holds. Power capacity 6 tons. Screw tip protector included.

- C** CG-250H Basic Small 2-Jaw Slide-Hammer Type Puller.
- D** CG-250C Combination Small 2-Jaw Slide-Hammer and Screw Type Puller consisting of CG-250H, CG-1 Pulling Plate Attachment and CG-250-1 hex headed pressure screw.
- E** CG-253H Small 3-Jaw Slide-Hammer Type Puller.

MEDIUM 2-JAW and 3-JAW SLIDE-HAMMER PULLERS 8½" JAW SPREAD

8½" maximum jaw capacity on outside holds. Max. jaw reach is 5½". Operate through 2½" opening for inside pulls. 10 ton power capacity. With exception of yokes and locking plates, all parts of the 2-Jaw and 3-Jaw model are identical. You can adapt a 2-Jaw model to a 3-Jaw by adding the CG-273-2 yoke, CG-273-5 locking plate and one extra CG-270-3 jaw. Screw tip protector is included.

- F** CG-270-H Basic Medium 2-Jaw Slide-Hammer Type Puller.
- G** CG-270C Combination Medium 2-Jaw Slide-Hammer and Screw Type Puller consisting of CG-270H, CG-1 Pulling Plate Attachment and CG-270-1 hex headed pressure screw.
- H** CG-273H Basic Medium 3-Jaw Slide-Hammer Type Puller.
- I** CG-273C Combination Medium 3-Jaw Slide-Hammer Screw Type Puller consisting of CG-270H, CG-1 Pulling Plate Attachment and CG-270-1 hex headed pressure screw.

Puller Series Specifications

CG Model Series		Max. Jaw Cap.	Max. Jaw Reach	Works Thru Minimum Opening of	Approx. Cap in. Tons	Pressure Screw Hex
Dwarf	CG-240, CG-243	3"	2½"	⅞" diam.	3½	⅜"
Small	CG-250, CG-253	4½"	3"	1½" diam.	6	⅝"
Medium	CG-270, CG-273	8½"	5½"	2½" diam.	10	¾"
Intermediate	CG-280, CG-283	10"	8¼"	3" diam.	10	¾"
Large	CG-300	12"	9½"	3½" diam.	20	1"
Extra Large	CG-305	15"	14⅝"	5" diam.	20	1"

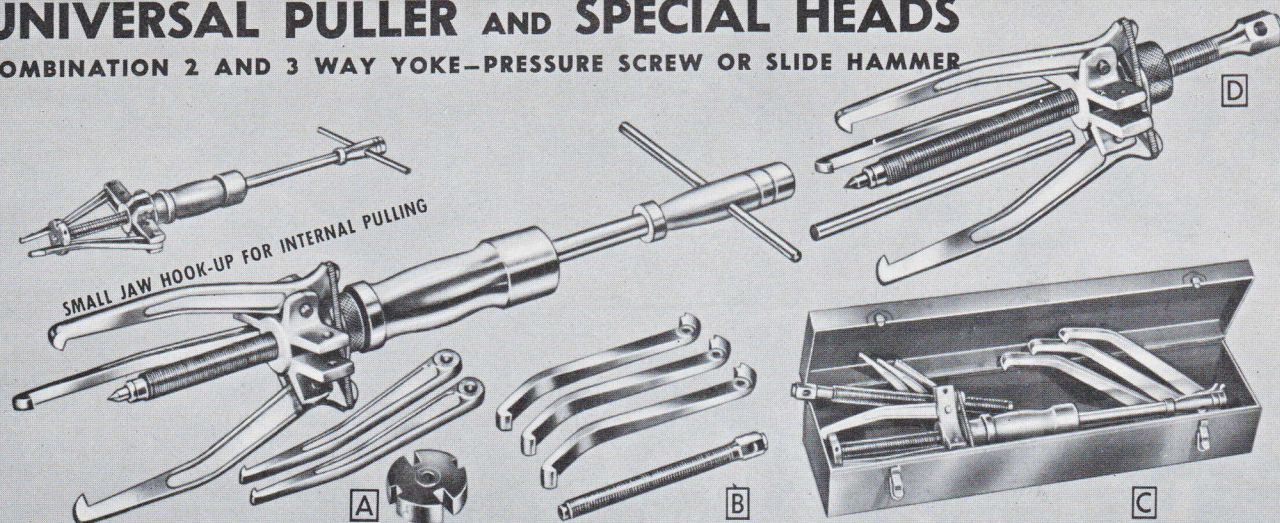
Stock Numbers of Individual Parts of Pullers

Description	PULLER SERIES					
	Dwarf	Small	Medium	Inter-mediate	Large	Extra Large
Hexhead Screw	CG-240-1	CG-250-1	CG-270-1	CG-270-11	CG-308-1	CG-305-8
Yoke (2 Jaw)	CG-240-2	CG-250-2	CG-270-2	CG-270-2	CG-300-2	CG-300-2
Yoke (3 Jaw)	CG-243-2	CG-253-2	CG-273-2	CG-273-2		
Jaw	CG-240-3	CG-250-3	CG-270-3	CG-270-10	CG-300-3	CG-305-9
Lock Plate (2 Jaw)	CG-240-5	CG-250-5	CG-270-5	CG-270-5	CG-300-5	CG-300-5
Lock Plate (3 Jaw)	CG-243-5	CG-253-5	CG-273-5	CG-273-5		
Spring	CG-240-6	CG-250-6	CG-270-6	CG-270-6	CG-300-6	CG-300-6
Adj. Nut	CG-240-7	CG-250-7	CG-270-7	CG-270-7	CG-300-7	CG-300-7
Slide Bar	CG-240-8	CG-250-8	CG-270-8			
Slide Hammer	CG-240-9	CG-250-9	66-2			
Point Protector		★CG-5	★CG-5	★CG-5		
Cross Bar		10-F	10-F			
Pulling Plate		★CG-1	★CG-1			

Medium Series Pullers may be converted into the intermediate Series simply by adding two or three CG-270-10 Jaws and the CG-270-11 Hexhead Screw.

UNIVERSAL PULLER AND SPECIAL HEADS

COMBINATION 2 AND 3 WAY YOKE—PRESSURE SCREW OR SLIDE HAMMER



UNIVERSAL PULLER SETS

A CJ-66A Slide-Hammer Puller. With 2/3-way yoke, 3 medium jaws for outside pulls and 2 small jaws and spreader disc for inside pulling.

CJ-66A-B Set. Above puller in KRA-109 metal case.

▲ **A and B CJ-68 Combination Puller.** Use either as a slide-hammer puller or a screw-type puller. Contains all parts in CJ-66A plus 3 large jaws and 13" pressure screw.

C CJ-68-B Set. Above puller in KRA-109 metal case.

D CJ-63 Screw-Type Puller. With 2/3-way yoke, 3 medium jaws and pressure screw.

KRA-109 Metal Case. Heavy gauge steel, spot welded, red enamel finish. 25½" x 6" x 4½" high, has 2 hasp fasteners and top carrying handle. Room for above pullers plus special purpose heads.

These Features Make Work Easier

● **Booster Hammer** gives a sudden, powerful blow, guided by the shaft in the direction of the pull.

● **Guided Blow** combined with center tension is the most effective pulling force.

● **Pulling Force** is distributed equally on all sides of the pull, prevents binding of the unit being pulled.

● **Short Screw** services jobs in close places where the slide hammer cannot be used. Fits a ¾" wrench.

● **2 and 3-way yoke** adapts the tool to any type of work. The 2-way throw is used for internal pulling jobs, or where a 3-way grip cannot be used.

● **Locking Feature** contributes to ease of handling the puller. A collar, locking nut and spring hold the jaws open or lock them on the job. Once locked on they cannot slip off and cause trouble.

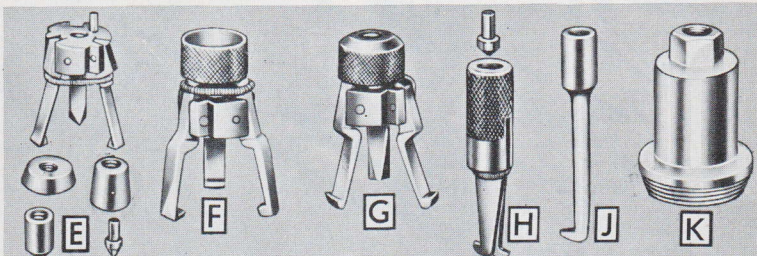
● **Spreader Disc** has two sets of guide channels to provide a wide range of expansion while holding the jaws in line for inside pulling jobs.

● **Yoke Pins** are fitted with friction balls for easy interchange of units.

● **Jaw Capacity.** Small jaws insert through ½" opening for internal pulling. Cap., medium jaws 6¼", large jaws 10".

Parts Comprising Above Pullers

Stock No.	Description	Set CJ-63	Set CJ-66A	Set CJ-68
66-1	Slide Hammer Shaft.....		1	1
66-2	Booster Hammer.....		1	1
66-3	Combination Yoke.....	1	1	1
66-A5	Medium Jaw.....		3	3
66-A6	Small Jaw.....		2	2
66-7-1	Locking Collar.....	1	1	1
66-7-2	Locking Collar Nut.....	1	1	1
66-8A	Spreader Disc.....		1	1
66-8A-1	Set Screw.....		1	1
66-9A	Yoke Pin.....	3	3	3
66-10	Centering Adaptor.....	1	1	1
66-11	Spring Retainer.....	1	1	1
66-12A	13" Pressure Screw.....	1		
66-13	Large Heavy Jaw.....			3
10-F	Bar Handle.....	1	1	1



SPECIAL PURPOSE PULLER HEADS

These special head assemblies all fit the shaft of the Universal Pullers described above and all except **E** and **H** fit the CG-270-8 shaft, page 100.

E CJ-66-15 Bearing Race Remover Head. Solidly and compactly built for removing tight bearing races. Has a gripping range of 1¼" to 3½". Three fingers have flanges that grip behind the race even when it is flush with the housing. Four expansion plugs are included with this head.

F CJ-66-20 Axle Puller Head. Takes all sizes—is quick and easy to use. Knurled adjusting nut contracts the three jaws to grip behind the axle nut.

G CJ-66-30 Chevrolet Bearing Race Remover Head. Use with slide hammer and shaft to pull grease retainer and axle bearing in one operation on Chevy cars and trucks. Fingers are long enough to pull many other retainers and bearings which standard pullers won't handle.

H CJ-66-25 Grease Retainer Puller Head. The thin, tapered jaws are pressed together, inserted through the grease retainer and expanded behind it.

I CJ-66-19 Bearing Hook Head. Pulls pilot bearings too large for the A-78 Pilot Bearing Puller as well as grease retainers, bearing races etc., on cars and trucks. 5½" long, hook width ¾". (A-78 is shown below.)

K Oil Seal Pullers. Many oil or grease retainers cannot be pulled with internal expanding-jaw pullers, but are easily removed with one of these special oil seal pullers. The tapered thread is inserted into the seal until tight and, depending upon the presence or absence of a center shaft, either the pressure screw or slide shaft and hammer may be used to pull the seal. Each of the four sizes listed below has the same degree of taper and thread size, but they differ in diameter and the sizes of oil seals they will fit.

CJ-66-26 Oil Seal Puller	Taper diam. 1¾" min., 1¾" max.
CJ-66-16B Oil Seal Puller	Taper diam. 1½" min., 2¼" max.
CJ-66-24A Oil Seal Puller	Taper diam. 1¾" min., 2¼" max.
CJ-66-23A Oil Seal Puller	Taper diam. 1½" min., 2¼" max.

A BEARING PULLER

A-78 Bearing Puller. For smaller bearings in motors, and generators, clutch pilot bearings, etc. Pulling capacity of the puller is 2½". The larger jaws are designed to remove bronze or oilite bushings without crumbling them.

Tool Parts

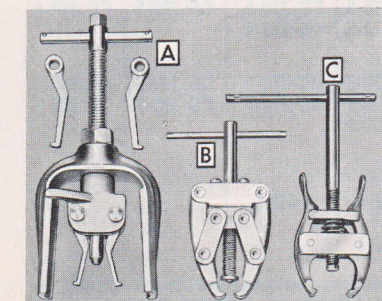
A-78-1"U" Shape Body	A-78-5Pressure Screw
A-78-2Jaw Holder	A-78-6AJaw Pin (2)
A-78-3Large Jaw (2)	A-78-7Slide Bar
A-78-4Small Jaw (2)	A-78-9Pressure Nut

B SMALL GENERAL USE PULLER

CG-30A Small Puller. Spring action closes and holds jaws in position while screw is tightened. Leverage works through the threaded crown and lever arms—the harder the pull—the tighter the grip. Jaws spread to 1½" and accommodate gears up to ¾" thick. Maximum distance from screw to jaw tips with jaws open is 1½". A good terminal puller.

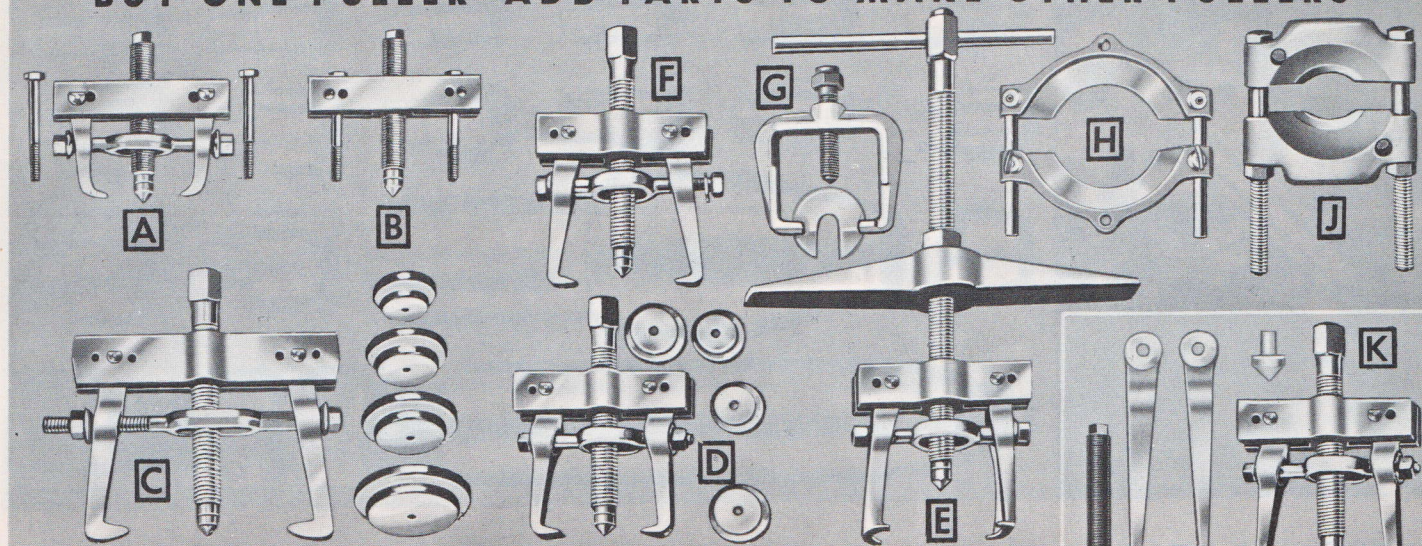
C BATTERY CABLE PULLER

CJ-92 Battery Cable Puller. Pressure between thumb and forefinger opens jaws. When released, self locking jaws hold themselves in place. A few turns of the screw will lift the tightest cable terminal without damage to either battery case or posts. Also useful for pulling small gears, bearings, etc.



Snap-on INTERCHANGEABLE PULLER SETS

BUY ONE PULLER—ADD PARTS TO MAKE OTHER PULLERS



The following pullers are assembled from parts listed below—using one puller as a basic unit the addition of other parts enables you to make one or more of the other pullers. Screws and yokes have the same thread size to provide interchange of long and short screws.

TIMING GEAR PULLERS

A CJ-87 Universal Timing Gear Puller. Has special jaws and jaw clamp to handle the Chevrolet cars and GMC trucks fibre timing gear. Jaws are inserted through the gear holes and pull against the steel insert. Two $\frac{3}{8}$ "-16 studs handle a majority of tapped timing gears . . . also fit the tapped holes in the CJ-950 Bearing Separator. Screw is only $\frac{1}{4}$ " long, works in close quarters.

B CJ-83B Timing Gear Puller. The short screw on this puller—only $\frac{1}{4}$ " long—makes it ideal for close quarter work. One set of studs with a thread size of $\frac{3}{8}$ "-16 is furnished to handle the majority of tapped timing gears . . . also fits tapped holes in the CJ-950 Bearing Separator.

SIDE CARRIER BEARING PULLERS

C CJ-85A Carrier Side Bearing Puller for Large Trucks. Pulls bearings without damaging them. Jaws are locked behind the bearing by means of the clamp bolt and pull from the inner race. Four adaptors are furnished to handle all sizes of these bearings.

D CJ-81D Side Bearing Puller. Removes carrier side bearings without injuring them. The narrow jaws slip into the housing grooves in back of the bearing and let the jaws seat and pull from the inner race. The jaws are locked on the bearing by means of the clamp bolt. Yoke has two sets of holes for positioning of jaws. Center adaptor and four bearing adaptors fit a wide range including Corvair and Falcon.

PINION GEAR PULLER

E CJ-86 Pinion Gear Puller. On all GM cars on which it is possible to remove the assembly through the differential housing, the CJ-86 will do the job without dropping the drive shaft. The wide jaws cover 3 teeth on either side for greater gripping power without danger of damage to the gears. A ball bearing takes up the thrust for easy operation. Yoke has 2 jaw positions.

PITMAN ARM PULLERS

F CJ-82B Pitman Arm Puller. A fast action Pitman Arm Puller that can be used for a wide variety of other jobs. Clamp bolt locks the puller on the Pitman arm leaving both hands free for the pulling operation.

G CJ-89A Pitman Arm Puller. For 1955-62 Ford, Mercury, Lincoln, Thunderbird and many other makes of late model cars and light trucks. Anvil end of screw is heat treated to withstand hammer blows . . . tapping the anvil when screw is tightened will often loosen the arm from the tapered shaft. Puller has $\frac{1}{4}$ " reach, $\frac{1}{8}$ " jaw opening, $\frac{2}{8}$ " inside jaw width. Screw has $\frac{3}{4}$ " hex. A "C" type washer furnished with this puller permits the tool to be used to remove tie-rod ends.

CJ-89-3 "C"-Type Washer

GENERATOR PULLEY PULLER

H CJ-88 Generator Pulley Puller. Works on practically every make of car or light truck with little danger of damage to the pulley or the generator. Capacity ranges from $\frac{1}{4}$ " to $\frac{1}{2}$ ". The two sections slide together on side shafts to fit the job and wing nuts lock the position. Actual pulling may be done with the CJ-83B or CJ-87 Timing Gear Pullers, each section has a $\frac{3}{8}$ "-16 tapped hole to accept the threaded studs, or jaw-type pullers may be hooked behind the slide shafts. Forged steel sections taper to the center for easy entry.

BEARING SEPARATORS

J For separating and pulling double bearings, closely fit gears, etc. Use with 2 jaw or slotted yoke pullers.

CJ-950 Separator. $\frac{2}{4}$ " O.D. Cap. Use with CJ-83B, CG-250A or $\frac{3}{8}$ "-16 studs.

CJ-951 Separator. $\frac{4}{4}$ " O.D. Cap. Use with CJ-84C, CG-270A or $\frac{5}{8}$ "-18 studs.

CJ-952 Separator. $\frac{5}{4}$ " O.D. Cap. Use with CG-300 or CJ-84C or $\frac{5}{8}$ "-18 studs.

OPTIONAL PULLER JAWS

CJ-282-1 Large Puller Jaw. (2 required.) May be used with the pullers listed on this page.

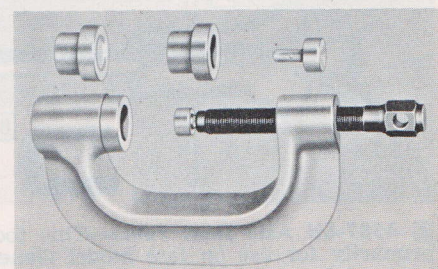
Parts Comprising Above Pullers

Part No.	Description	A	B	C	D	E	F	K
CJ-85-1	Yoke			1				
CJ-86-1	Yoke	1	1		1	1	1	1
66-12A	Screw (13")					1		
CJ-83-2	Screw (6 $\frac{1}{4}$ ")			1	1		1	1
CJ-83-3	Screw (4 $\frac{1}{4}$ ")	1	1					1
A-86-9	Cross Bar					1		
66-15-3	Center Adaptor	1	1	1	1	1	1	1
★ CJ-81-2	Jaw				2		2	2
★ CJ-85-2	Jaw				2			
★ CJ-86-2	Jaw					2		
★ CJ-87-1	Jaw	2						2
CJ-85-3	Clamp Bolt			1				
CJ-86-4	Clamp Bolt	1			1	1	1	1
66-9A	Jaw Pin	2	2	2	2	2	2	2
CJ-85-4	Clamp Washer	2	2	2	2	2	2	2
ESD-1053	Clamp Nut	2	2	2	2	2	2	2
ESD-504	Small Stud	2	2					2
A-86-3	Straddle Bar					1		
ESD-1050	Pressure Nut					1		
A-86-7	Thrust Bearing					1		
CJ-84-16	Center Adaptor							1
	Adaptors							
CJ-81B1	1 $\frac{1}{2}$ "-1.120"				1			1
CJ-81B2	1 $\frac{1}{2}$ "-1.245"				1			1
CJ-81D-1	Corvair Adaptor				1			1
CJ-81D-2	Falcon Adaptor				1			1
CJ-85-5	2"-1.500" Adpt.				1			
CJ-85-6	2 $\frac{1}{8}$ "-1.650"				1			
CJ-85-7	2 $\frac{1}{2}$ "-1.840"				1			
CJ-85-8	3 $\frac{1}{8}$ "-2 $\frac{1}{8}$ " Adpt.				1			
CJ-282-1	Long Jaw							2

K INTERCHANGEABLE SET
MAKES PULLERS A B D AND F
Saves over 50% of the cost

CJ-282B Interchangeable Puller Set. It takes only a minute to select the necessary parts and assemble either of the four pullers . . . at less than half the cost of the four complete tools. Lets you handle Pitman Arms, Timing Gears, including Chevy cam and GMC truck fibre gears, Carrier Side Bearings and many other pulling jobs.

UNIVERSAL JOINT BEARING TOOL



CJ-91B Universal Joint Tool. Now more versatile than ever . . . three new parts listed below are now included to permit servicing universal joints on Compacts and foreign cars. Removes and replaces all universal joint needle-type bearings. Eliminates hammer and punch methods which may result in injury due to flying parts. It can be used on the car or at the bench and permits easy and profitable joint lubrication. A removable bushing provides for use on either car or truck joints. The $\frac{6}{16}$ " screw can be turned with any $\frac{3}{4}$ " wrench or a bar. Position tool around the bearing and tighten screw until lock ring can be removed—reverse tool and press the opposite bearing until its lock ring can be removed—additional pressure will force out the first bearing. Reverse the tool again to push out the second bearing. Reassemble bearings in original positions. Lock rings or plates located outside the bearings must be removed before applying tool.

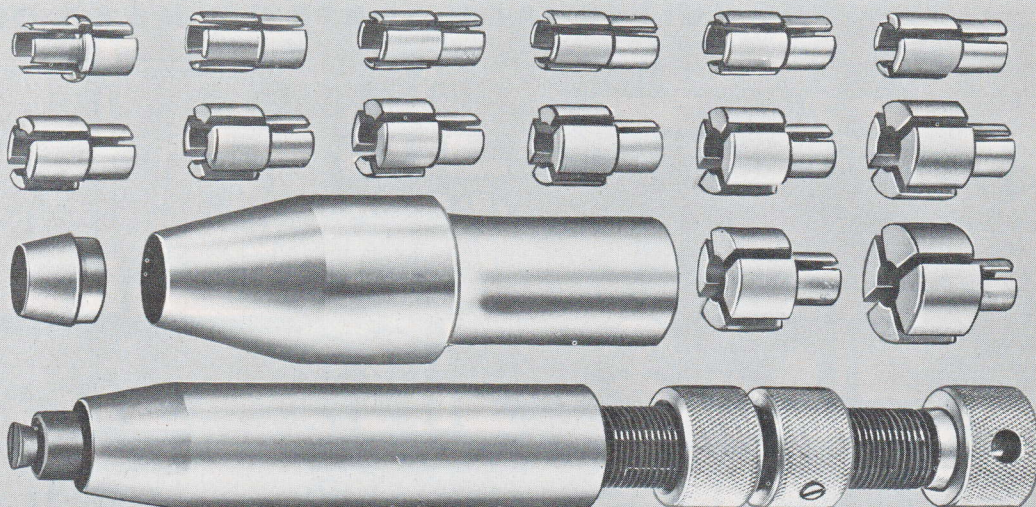
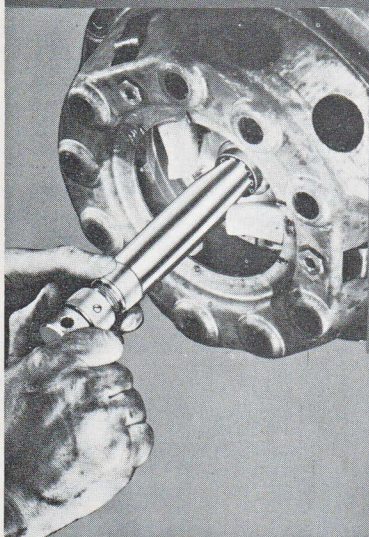
CJ-91-4 Small Bearing Driver.

CJ-91-5 Adaptor Bushing. Reduces the hole size to $\frac{3}{16}$ ".

CJ-91-6 Small Expansion Plug.

Bring your present model up to date by adding these three parts.

UNIVERSAL CLUTCH ALIGNER SET



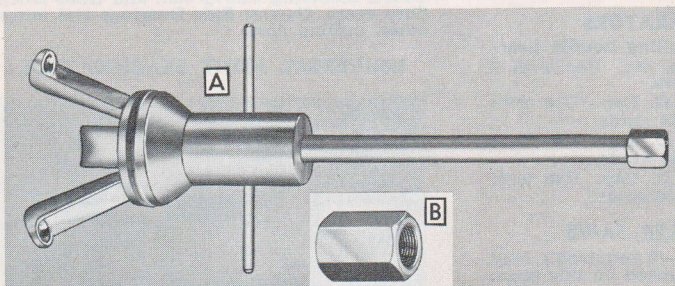
A-37H Clutch Aligner Set. Designed for use on all passenger cars and trucks equipped with standard (non-automatic) transmissions, including compact cars and foreign imports. Engineered to provide maximum speed and efficiency, this tool locks firmly in the clutch pilot bearing to leave both of the operator's hands free to replace and tighten the compressor plate. The set provides a quick, accurate clutch aligning service for the complete range of automotive single disc clutches.

Amazingly easy to use, simply place the correct size of expanding pilot on the tool and lock securely in the pilot bearing—then adjust the sliding tapered sleeve to center the clutch plate and to hold it firmly in place while you complete the assembly. When necessary, the tool can also be operated through the bell housing.

A-37H Clutch Aligner Set contains the following:

Stock No.	Description	Stock No.	Description
A-37-3	Rod and Taper Bushing	A-37-13	.788" Collet
A-37-4A	Centralizer Knob	A-37-14	.984" Collet
A-37-5A	Centralizer Nut	A-37-17	1.181" Collet
A-37-15A	Centralizer Collar	A-37-18	.718" Collet
A-37-22	Centralizer Locator	A-37-25	.562" Collet
A-37-23B	Centralizer Tube	A-37-27	.812" Collet
A-37-2	1 1/4" Sleeve	A-37-28	.656" Collet
A-37-6	1 5/8" Sleeve	A-37-29	1.00" Collet
A-37-9	.625" Collet	A-37-30	.500" Collet
A-37-10	.750" Collet	A-37-31	.578" Collet
A-37-11	.590" Collet	A-37-33	.875" Collet
A-37-12	.668" Collet		

AXLE SHAFT PULLER



A 4567-SH Axle Shaft Puller—This tool has been designed primarily for use on late model General Motors and Ford automobiles, but can also be used on all cars and light trucks which are equipped with flange type axles. The rear axle shafts of these cars are sometimes very difficult to remove. This puller lets you do the job quickly, easily and safely.

The tool consists of the rugged body assembly with three heavy jaws (interchangeable with our Y-4567A Universal Wheel Puller) a 23 1/2" long slide hammer screw, and a massive ten pound slide hammer. The 1 1/4" diameter screw has a 1 1/4"—12 thread at one end, and a 1 1/2" hexagon portion at the opposite end which may be turned with a standard wrench if necessary. The slide hammer provides plenty of power to break loose stubborn axles—and is equipped with two 4" long, 1/2" diam. handles. Includes the following parts:

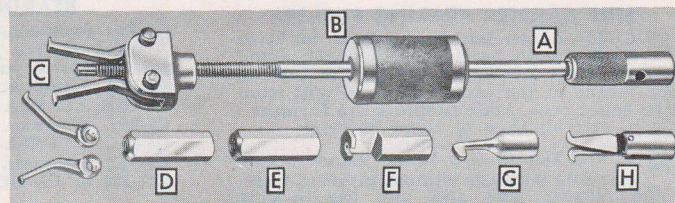
4567-N Slide Hammer Screw.

4567-O Slide Hammer.

4567-Q Base Housing and Jaws Assembly.

B 4567N-1 Chrysler Adaptor. Adapts above puller for use on rear axles of Chrysler products. 1 3/4" hexagon shaped unit threads onto the axle, the opposite end threads onto the slide hammer screw; a few outward blows with the slide hammer frees the axle. This adaptor is not furnished with the 4567-SH Set.

SMALL SLIDE HAMMER PULLER



A Universal Tool for Small Pulling Jobs

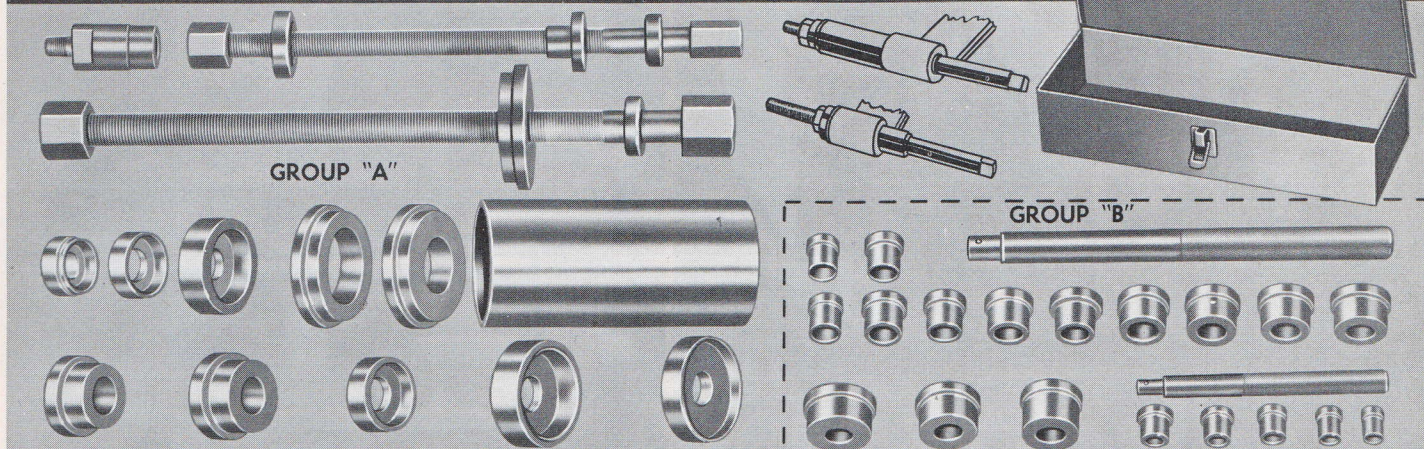
CJ-93 Small Slide Hammer Puller Set. Removes small bushings, seals, sleeves, bearings, bronze or oilite bushings, pressed in bolts, etc. A special adaptor in the set is used to pull out dents and creases in body panels. Truly a versatile tool, this puller set contains all the components shown above and listed below. The slide hammer and screw provide the necessary power for breaking loose those tight fitting parts; the bearing puller head assembly is designed for inside grip operations and has two pairs of jaws. The larger jaws are for removing bronze or oilite bushings without crushing and the smaller have numerous small pulling applications.

The expandable grease retainer puller head pulls seals on power steering units, water pumps, various bearings and races; the bearing hook is very effective for removing seals with the shaft in place; body dent puller head lets you remove dents and creases in body and fender panels; the two stud puller heads are used for pulling pressed in studs which have exposed threads.

CJ-93 Set Contains one each of the following:

Stock No.	Description	Stock No.	Description
A CJ-93-1	Slide Screw	E CJ-93-7	5/16"-24 Stud Adaptor
B CJ-93-2	Slide Hammer	F CJ-93-6	Body Dent Adaptor
C CJ-93-3	Bearing Puller Assy.	G CJ-93-5	Bearing Hook
D CJ-93-8	3/8"-24 Stud Adaptor	H CJ-93-4	Grease Retainer Adapt.

BUSHING INSERTER AND REMOVER SETS



Provide an easier way to remove tight bushings and install new ones without damage. Standard and specialized bronze, steel, rubber or Enlox bushings can be serviced and the

range of adaptor sizes covers practically all shackle and steering bushings through 1962 models. New bushings can be inserted with the inserter set as shown in the lower drawing—tightening the screw forces the bushing into place quickly and safely. The sleeves permit you to force out old bushings as shown in top drawing and are indispensable on jobs where there is not sufficient room to drive them out.

Stock No.	Description
A-57-C	Screw, 1/2"-20 thread
A-57-3	Washer, 1/2" I.D., 1 1/4" O.D.
*A-57-14A	Large Bushing Driver
*A-57-15	Small Bushing Driver
A-57-35	Screw, 5/8"-18 thread
A-57-36	Sleeve, 4 1/16" long, 2 1/16" I.D.
A-57-37	Sleeve Plate, 1 1/2" I.D.
A-57-38	Sleeve Plate, 1 1/2" I.D.
A-57-39	Sleeve Plate, 4 1/4" I.D.
A-57-41	Sleeve Plate, 1 1/2" I.D.
ESD-1428	Bearing, 1 1/2" I.D., 1" O.D.
ME-4A-2	Nut, 1/2"-20 thread
ME-4A-4	Nut, 5/8"-18 thread
ME-11A-1	Bearing, 5/8" I.D., 1 1/8" O.D.

MISCELLANEOUS ADAPTORS

Stock No.	For Bushing I.D. O.D.	Stock No.	For Bushing I.D. O.D.
*A-57-6	3/8" x 7/16"	*A-57-16	1 1/8" x 1 1/2"
*A-57-7	1/2" x 5/8"	*A-57-17	1 1/8" x 1 1/2"
*A-57-8	1/2" x 5/8"	*A-57-18	1 1/8" x 1 1/2"
*A-57-10	5/16" x 5/8"	*A-57-20	1 1/8" x 1 1/2"
	1 1/8" x 1 1/2"	*A-57-25	1 1/8" x 1 1/2"
*A-57-13	1" x 1 1/8"	*A-57-26	1 1/8" x 1 1/2"

SPECIAL CHEVROLET ADAPTORS

Number	Chevy Adaptors For —
*A-57-5	6-Cyl. King Bolt Bushing (also fits 1960 Mercury stabilizer bushing)
*A-57-11	6-Cyl. Knee Action King Bolt Bushing
*A-57-12A	1 1/2" Ton Truck Front Spindle Bushing
*A-57-19	6-Cyl. Water Pump Bushing
*A-57-22	Truck Spindle Bushing
A-57-27	Spring Shackle Puller
A-57-44	Front Rubber Bushing Replacer
A-57-45	Front Rubber Bushing Remover
A-57-46	Rear Spring Bushing

SPECIAL FORD ADAPTORS

Number	Ford Adaptors For —
*A-57-23A	Spindle Bushing
*A-57-24	Stabilizer Rubber Bushing
*A-57-29	F-7 and F-8 Truck King Pin Bushing
A-57-40	1958-60 Truck Rear Bushing
A-57-42	Front Rubber Bushing Remover
A-57-43	Front Rubber Bushing Replacer
A-57-47	Rear Spring Bushing
A-57-48	1954-58 Truck Rear Bushing

INSERTER AND REMOVER SET

(All Units in Group A and Group B)

A-57N-B Bushing Remover and Inserter Set. Complete with all parts listed at left and shown in groups A and B in the illustration. The five smallest adaptors are used only with the small driver. The set comes with the special KRA-104 metal box as shown above. This metal box has baked-on red enamel finish.

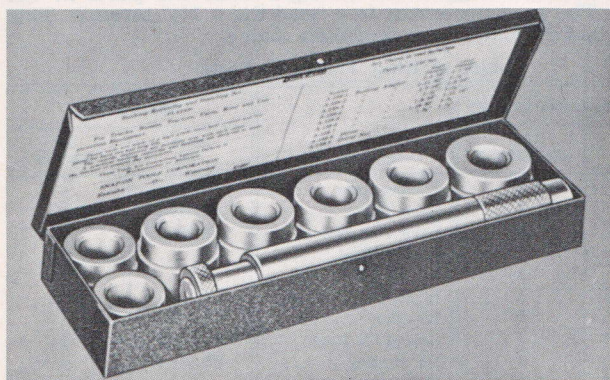
A-57N Above set. Tools only.

DRIVER SET

(Units Shown in Group B Only)

A-57J Bushing Driver Set. Consists of the large and small driver and nineteen bushing adaptors shown in group B and indicated by an (*) in the parts list. The small driver is used with the five smallest adaptors. Provides a basic set to which you can add other units later.

HEAVY DUTY BUSHING DRIVER SET FOR TRUCKS, TRACTORS AND BUSES



A-158 Heavy Duty Bushing Driver Set, in metal box. This set is designed for removing and replacing bushings on trucks, tractors and buses. It covers a range of sizes from 1 1/16" through 1 3/4" inside diameter bushings. The seven adaptors, the driver and driver nut are carefully heat treated and tempered to assure long life. Adaptors are secured to threaded driver shaft by a knurled nut. Knurled handle affords firm grip. Listed are a few of the truck and tractor bushings this set will handle.

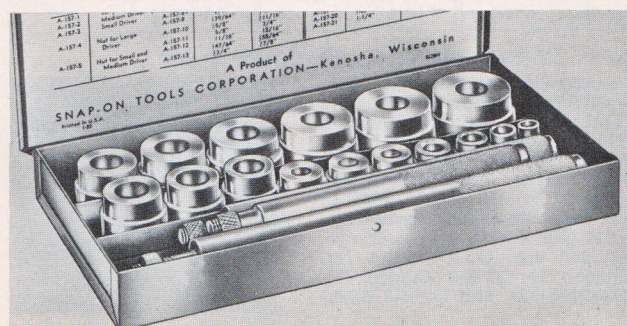
Autocar.....	1 1/32" Steering Knuckle
Caterpillar.....	1 1/16" & 1 3/4" Piston Pins
GMC Truck.....	1 1/32" Piston Pin
Hercules.....	1 1/32" & 1 1/2" Piston Pins
International.....	1 1/32" Piston Pin
International.....	1 1/32" Steering Knuckle
John Deere Tractor & Combine.....	1 1/32" & 1 3/4" Piston Pins
Mack Truck.....	1 1/32" & 1 1/16" Piston Pins
Mack Truck.....	1 1/16" Steering Knuckle
McCormick-Deering.....	1 1/16" Piston Pin
White Truck.....	1 1/16" Steering Knuckle

BUSHING ADAPTORS

Stock No.	Small Diameter	Large Diameter
A-158-1	1 1/16"	1 1/2"
A-158-2	1 1/16"	1 1/2"
A-158-3	1 1/16"	1 1/2"
A-158-4	1 1/16"	1 1/2"
A-158-5	1 1/16"	1 1/2"
A-158-6	1 1/16"	1 1/2"
A-158-7	1 1/16"	1 1/2"

A-158-8 Driver A-158-9 Driver Nu

This set will remove and replace bushings on passenger cars and many trucks and tractors. Adaptors are machined to fit



BUSHING DRIVER SET

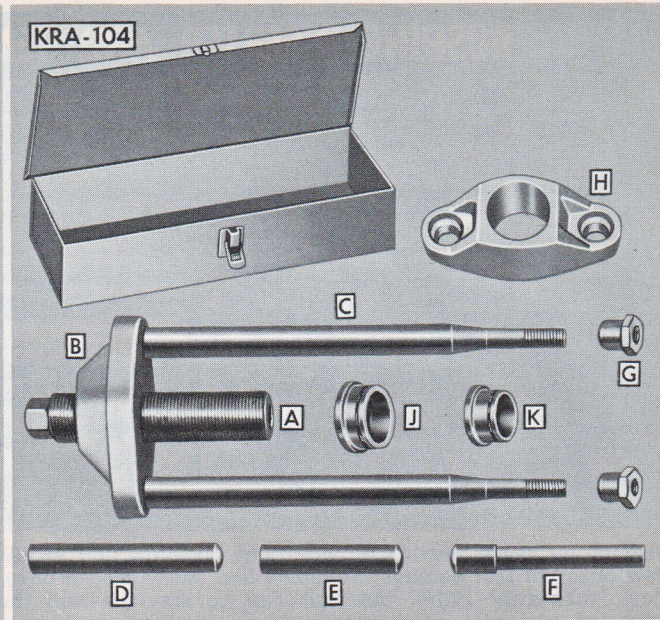
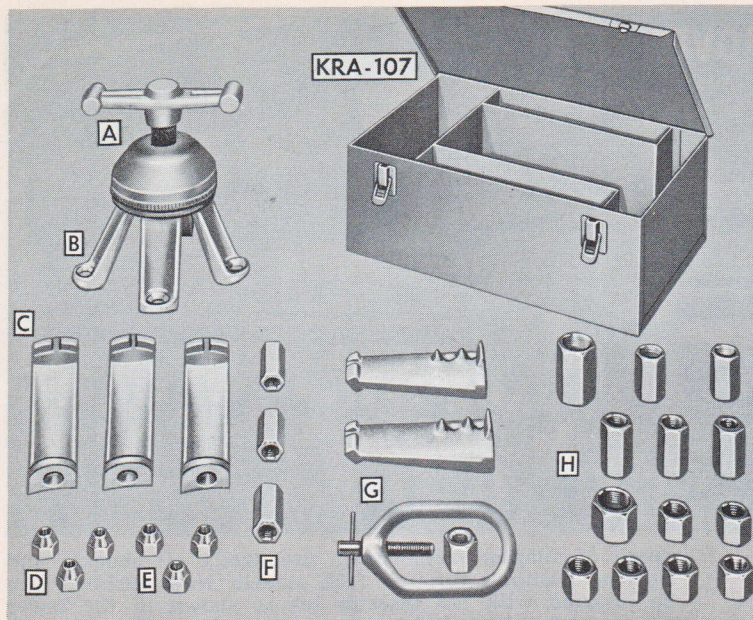
bushings accurately and are held on the threaded driver shafts by a knurled nut. Once secured, they cannot come off during the operation.

Knurled driver handles afford a firm grip and the anvil end is relieved to prevent excessive mushrooming. The small and medium size drivers fit all smaller bushings through the A-157-12, the large driver fits the remainder.

A-157A Bushing Driver Set. Contains all units listed below and 17 bushing adaptors

A-157-1	Large Driver
A-157-2	Medium Driver
A-157-3	Small Driver
A-157-4	Nut for A-157-2 and for A-157-3
A-157-5	Nut for A-157-1
KRA-113	Metal Box

Stock No.	For Bushing I.D. O.D.	Stock No.	For Bushing I.D. O.D.
A-157-6	3/8" x 7/16"	A-157-14	1 1/8" x 1 1/2"
A-157-7	1/2" x 5/8"	A-157-15	1 1/8" x 1 1/2"
A-157-8	1/2" x 5/8"	A-157-16	1 1/8" x 1 1/2"
A-157-9	5/16" x 5/8"	A-157-17	1" x 1 1/8"
A-157-10	3/8" x 5/8"	A-157-18	1 1/8" x 1 1/2"
A-157-11	1/2" x 5/8"	A-157-19	1 1/8" x 1 1/2"
A-157-12	1/2" x 5/8"	A-157-20	1 1/8" x 1 1/2"
A-157-13	1/2" x 5/8"	A-157-21	1 1/8" x 1 1/2"
		A-157-22	1 1/8" x 1 1/2"



UNIVERSAL WHEEL PULLER

Adaptable to any car by changing Jaws—Easiest Puller to use

It pulls any demountable wheel hub for any passenger car and most light weight trucks by inserting the proper type jaws and attaching the tool to the stud bolts. The patented pressure screw drive is known to be the fastest, easiest, safest, and most efficient method of pulling any hub . . . The interchangeable jaws pivot and swing to any desired bolt circle. Pulling is always direct from the housing flange, and the jaws automatically center themselves, providing a positive direct leverage regardless of the working angle of the jaws. BLUE-POINT Thrust Nuts should be used on small and medium sized axles to protect the threads while pulling the hub. It takes time to clean up or re-cut threads after they have been damaged. These nuts, machined from high quality steel and especially heat treated, will more than repay their small cost. The relatively low cost of this equipment is no real measure of its full economy—it will do every job efficiently—without waste of time and without danger to any part of the car or to the operator.

UNIVERSAL WHEEL PULLER SET

Y-4567A-B Universal Wheel Puller Set. Services passenger cars and most light trucks with demountable wheels. Contains all parts listed below. Complete in KRA-107 Metal Box.

- | | |
|---|--|
| [A] 4567-P.....Body and hammer-head screw assembly without jaws | [H] ★TN-1300 Set, 13 thrust nuts: (For protection of axle threads) |
| [B] 4567-GA.....Set of 4 short jaws | ★TN-201..... $\frac{5}{8}$ " x 18, $\frac{3}{4}$ " long |
| [C] 4567-H.....Set of 3 long jaws | ★TN-202..... $\frac{5}{8}$ " x 18, 2" long |
| [D] 4567-C..... $\frac{1}{16}$ " tapered stud nuts (3) | ★TN-241..... $\frac{3}{4}$ " x 16, $\frac{3}{4}$ " long |
| [E] 4567-CC..... $\frac{7}{16}$ " tapered stud nuts (3) | ★TN-242..... $\frac{3}{4}$ " x 20, 2" long |
| [F] 4567-I.....right and left hand thread $\frac{3}{4}$ " stud nuts (3) | ★TN-243..... $\frac{3}{4}$ " x 16, 2" long |
| [G] 4567-V Ford pass. car grooved hub set | ★TN-261..... $1\frac{1}{16}$ " x 16, $\frac{3}{4}$ " long |
| Replacement parts: | ★TN-281..... $\frac{7}{8}$ " x 14, $\frac{3}{4}$ " long |
| 4567-J.....2 special jaws | ★TN-282..... $\frac{7}{8}$ " x 18, $\frac{3}{4}$ " long |
| 4567-K.....Clamp with screw | ★TN-283..... $\frac{7}{8}$ " x 14, 2" long |
| 4567-L.....Clamp screw only | ★TN-321.....1" x 14, $\frac{3}{4}$ " long |
| 4567-M.....Clamp only | ★TN-322.....1" x 14, 2" long |
| TN-201.....Thrust nut | ★TN-401..... $1\frac{1}{4}$ " x 12, $\frac{7}{8}$ " long |
| | ★TN-402..... $1\frac{1}{4}$ " x 12, $2\frac{1}{2}$ " long |

KRA-107 Special metal box. $15\frac{3}{4}$ " x $9\frac{7}{8}$ " x $5\frac{5}{8}$ " high.

Y-4567A Universal Wheel Puller Set. Same set as above but tools only.

▲ **Y-4567B Wheel Puller Set.** Same puller parts as above but without the TN-1300 Set of thrust nuts and the box.

Y-4567B-B Set. The Y-4567B set with KRA-107 metal box.

4567A Hammer-head pressure screw only.

STANDARD WHEEL PULLER SET

S-4567A-B Standard Wheel Puller Set. For passenger cars and light trucks, except Ford, Mercury and Lincoln-Zephyr. Other units can be added as you find need for them. It consists of 4567-P Body and Drive Assembly, 4567-GA Set of Four Short Jaws and TN-1300 Set of thirteen Thrust Nuts, complete in KRA-107 Metal Box.

S-4567A Standard Wheel Puller Set, tools only.

S-4567B Set. Same as above but minus TN-1300 Set and Box.

TN-405 Thrust Nut. Fits Volkswagon axles. This item is not included in any of the above sets.

KING PIN PRESS SETS

Also see **NEW HYDRAULIC King Pin Press** on page 121

The SNAP-ON King Pin Press provides an easy way to remove the most stubborn king pins and eliminates time taking and dangerous methods such as heating and sledge hammer tactics. A steady powerful pressure pushes the pin out safely, easily and quickly. Every part is designed and constructed to provide plenty of reserve strength to remove the tightest pins. To remove King Pins, the front wheel is removed and the two yoke posts slipped over the axle and steering knuckle plate. The heads swivel enough to adapt themselves to practically any car. Several pilots and adaptor bushings adapt the tool to the different sizes of King Pins used.

CAR AND LIGHT TRUCK SETS

CG-212A-B General Purpose King Pin Set. Services most cars and light trucks including Ford 1 ton and $1\frac{1}{2}$ ton trucks with solid King Pins. Complete in KRA-104 box.

CG-212A Set. Above set without the box.

HEAVY TRUCK KING PIN PRESS SET

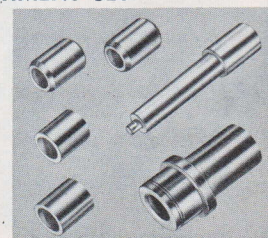
CG-230 Truck King Pin Press Set. Contains the units listed below. Parts are bigger and stronger than the parts in the car sets. The pressure screw hex head fits a $1\frac{1}{2}$ " wrench. This set will not fit into the box shown above.

List of King Pin Press Parts

FOR CARS—LIGHT TRUCKS		FOR TRUCKS	
Stock No.	Set CG-212A-B	Description of Part	Stock No. Set CG-230
(A) CG-21A	1	Pressure Screw	CG-230-1 1
(B) CG-21B	1	Screw Yoke	CG-230-2 1
(C) CG-21D	2	Screw Yoke Post	CG-230-4 2
(D) CG-21E	1	$\frac{3}{4}$ " Long Pilot	
(E) CG-21F	1	$\frac{3}{4}$ " Short Pilot	
(F) CG-21G	1	$\frac{5}{8}$ " Pilot	
(G) CG-21J	2	Post Nut	CG-230-5 2
(H) CG-21P5	1	General Use Head	CG-230-3 1
(J) CG-21P3	1	$1\frac{1}{4}$ " Bushing	CG-230-6 1
(K) CG-21P2	1	1" Bushing	
KRA-104	1	Metal Case	
		2" Pilot	CG-230-7 1
		4" Pilot	CG-230-8 1
		6" Pilot	CG-230-9 1
		8" Pilot	CG-230-10 1

TRUNNION PIN ATTACHMENT SET

CG-4A Trunnion Pin Attachment Set. Used with the SNAP-ON King Pin Press to remove and replace trunnion pins on Detroit No. 2 universal joints. Makes easy work of "ball and trunnion" universal joint repairs. Specifications call for this pin to be set within .006" of center and this attachment centers the pin into the ball within that tolerance. Parts included are: CG-4-1 Pilot (1), CG-4-2 Spacer (1), CG-4-3 Mandrel (1), CG-4-4 Bushing (2), and CG-4-5 Bushing (1).

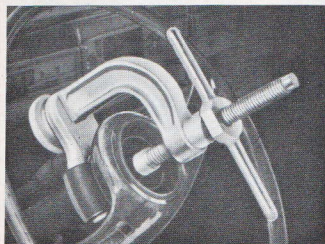


▲ Federal Specs: GGG-P-00781B applies to the Y-4567B Wheel Puller Set.

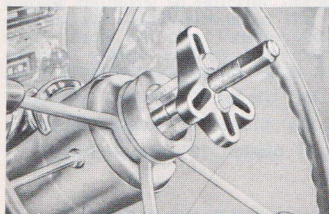
Snap-on UNIVERSAL STEERING WHEEL PULLER

Handles All Cars and Trucks

Here's How It Works!



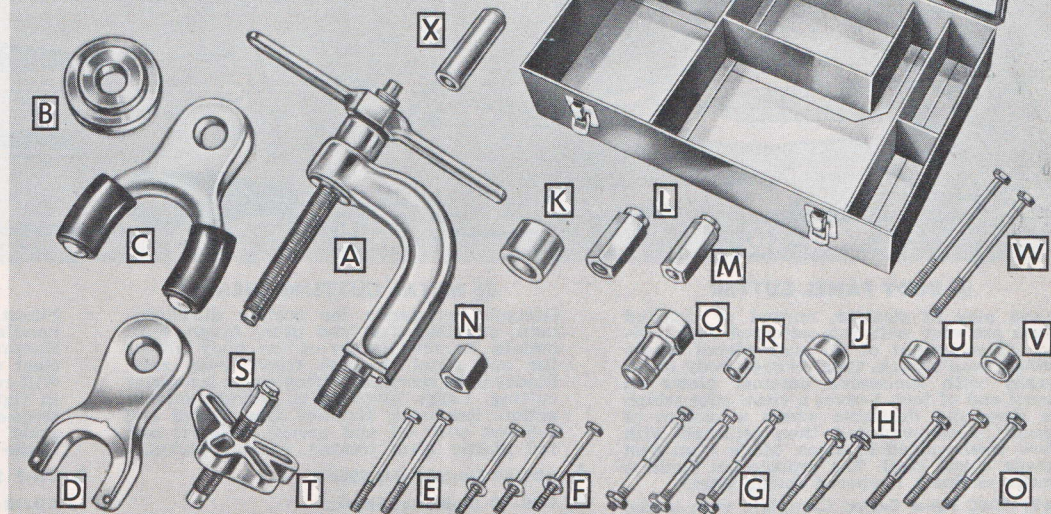
Wide fork and frame used on older type hubs . . . slotted adaptor protects horn wire.



Yoke and screw assembly pulling late model steering wheel.



The yoke type puller can be put to excellent use on many pulling jobs such as the removal of the outboard engine flywheel shown above.



AN EASIER, FASTER AND BETTER WAY TO DO THIS JOB

CG-630B Universal Steering Wheel Puller Set. Consists of all the parts shown above and listed below, in KRA-106 special metal case.

CG-630 Set. The above set without the case.

Here are all the units you need for fast, safe removal of steering wheels on cars and trucks. Practically all of the newer models require the Yoke Puller and its related parts to pull tapped wheel hubs, etc., while the Fork Puller and interchangeable parts are needed for older models. These tools place smooth, powerful pressure at

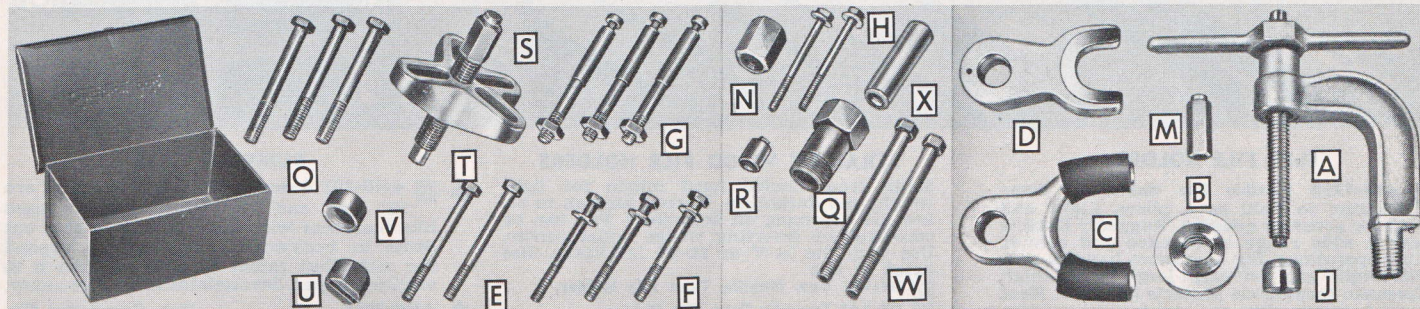
exactly the right point to assure a fast, safe job. The pressure screw in the Frame Puller does not turn . . . it is milled its entire length and works through a threaded bushing and key—thereby eliminating any possibility of damage to the shaft. Pressure screw and forks are in positive alignment, and the forged "I" beam standard does not permit give or spring. The narrow fork has brass insert, the wide fork has rubber sleeves to protect the steering column. Adaptors protect shaft and wiring from injury.

- A** CG-60H . . . Frame Assembly
- B** CG-60-2 Frame Nut
- C** CG-60-3 Wide Fork
- D** CG-60-4 Narrow Fork
- E** ★CG-60-7-4 5/16" N.F. Studs (2)
- F** ★CG-60-7-6 1/16" N.C. Studs (3) Fit Nash, Rambler, GMC.
- G** ★CG-60-7-7 . . . Buick Studs (3) Fit Studebaker.
- H** ★CG-60-7-9 1/4" N.F. Studs (2)
- J** CG-60-11A Slotted Adaptor

- K** CG-60-12-1 . . . Large Truck Adaptor
- L** ★CG-60K1 Ford Shock Puller
- M** ★CG-60K2 Chevy Shock Puller
- N** CG-60M1 1952-60 Buick, Cadillac Adaptor
- O** ★CG-60M2 3/8" N.C. Studs (3) Fit Cadillac, Olds.
- Q** ★CG-60N2 1953-60 Nash, Rambler Adaptor
- R** ★CG-60N3 1953-60 Nash, Rambler Screw Adaptor

- S** CG-60R1 Yoke Pressure Screw
- T** CG-60R2 4-Way Yoke
- U** CG-60R3 Yoke Screw Adap.
- V** CG-60R4 Buick Adaptor
- W** CG-60C-2 3/8" N.C. Studs (2), Chrysler, Imperial, DeSoto.
- X** CG-60C-1 Chrysler, Imperial, Desoto Adaptor

KRA-106 Special Metal Case



BASIC YOKE TYPE PULLER SET

CG-60G-B Yoke Set. Services the majority of late model design tapped hubs. Consists of the parts listed below. In KRA-111 special case, **CG-60G Set.** Above set without the case.

- S** CG-60R1 Yoke Pressure Screw
- T** CG-60R2 Four Arm Yoke
- U** CG-60R3 Pressure Screw Adaptor
- V** CG-60R4 Buick Adaptor
- E** ★CG-60-7-4 5/16" N.F. Studs (2)
- F** ★CG-60-7-6 . . . 1/16" N.C. Studs and Nuts (3)
- G** ★CG-60-7-7 Buick Studs (3)
- O** ★CG-60M2 3/8" N.C. Studs (3)

COMPLETE YOKE TYPE PULLER SET

CG-622-B Complete Yoke Set. All the parts in the Basic Yoke Set plus the additional parts listed below. In KRA-111 metal case.

CG-622 Set. Above set without the case.

- H** ★CG-60-7-9 1/4" N.F. Studs (2)
- N** CG-60M1 1952-60 Cadillac Adaptor
- Q** CG-60N2 . . . 1953-60 Nash, Rambler Adaptor
- R** CG-60N3 . . . 1953-60 Nash, Rambler Adaptor
- W** CG-60C-2 3/8" N.C. Long Studs (2)
- X** CG-60C-1 Adaptor

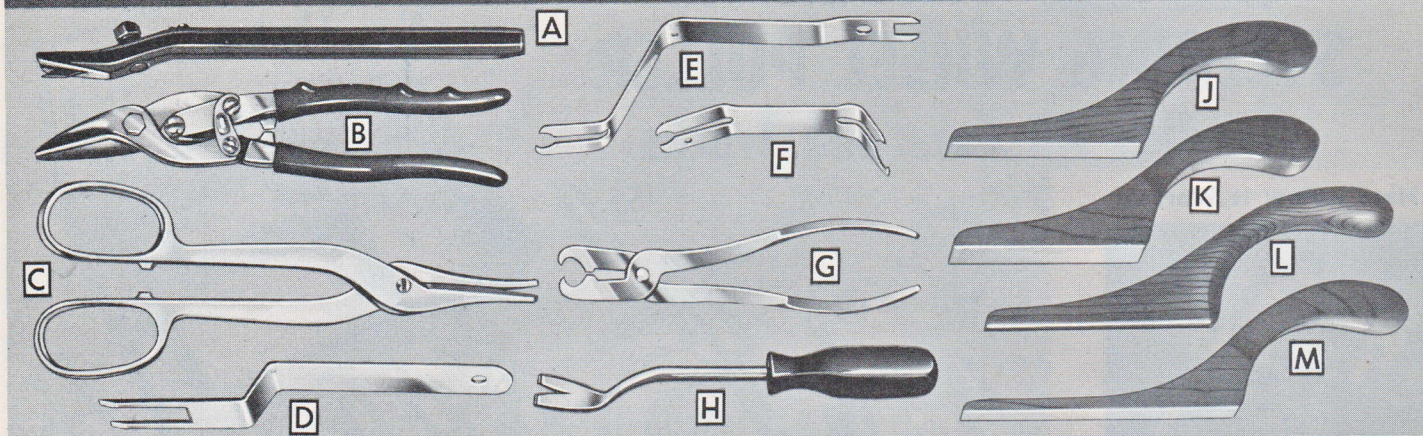
FORK TYPE PULLER SET

CG-60D-B Fork Set. For servicing older type hubs. Consists of the parts illustrated above and listed below. In KRA-106 special metal case.

CG-60D Set. Above set, tools only.

- A** CG-60H Frame Assembly
- B** CG-60-2 Frame Nut
- C** CG-60-3 Wide Fork
- D** CG-60-4 Narrow Fork
- J** CG-60-11A Slotted Adaptor
- M** ★CG-60K-2 Chevy Shock Puller

Snap-on SPECIAL BODY RECONDITIONING TOOLS



A BODY PANEL CUTTER

Long cuts in straight, curved or crooked lines are easy with this patented body cutter. Reaches out of the way places where shears won't work. Cuts through body steels easily with successive hammer blows on anvil end of tool. Leaves a clean edge which is especially desirable where a section of panel is removed and then replaced with new steel welded in place. Made from best grade chisel steel. The replaceable blade is made of finely tempered spring steel.

- ★BF-708C Panel Cutter. Complete with blade.
- ★BF-708C-2 Extra Cutter Blade.

B METAL CUTTING SHEARS

Designed primarily for cutting duraluminum, stainless steel and other tough, hard metals. Narrow design of the body allows the cut metal to pass freely over snip. Blades have serrated cutting edges for easier cutting. Large pivot bolts provide smooth action, less wear. Handles drop forged and covered with oil and grease resistant soft red plastic. Heat treated, chrome plated.

- ▲ CDS-10 Straight Cut Shears.
- ▲ CDR-10 Right Cut Shears.
- ▲ CDL-10 Left Cut Shears.

C TINNER'S SNIPS

Finest professional quality snips. Three sizes handle a wide variety of jobs and materials. Hammer forged from high quality alloy steel with cutting edges accurately ground. Will cut straight, circular or irregular shapes in right or left hand direction. Blades are shaped to draw metal into the jaws. Have great leverage for cutting heavy metals. Large finger grips afford comfortable grip.

- ▲ CD-7 Snips. 1½" blades, 7" overall length.
- CD-10 Snips. 2¼" blades, 10" overall length.
- ▲ CD-12 Snips. 3" blades, 12" overall length.

DOOR HANDLE RETAINER TOOLS—FOR PIN AND SPRING CLIP TYPES

The Correct Tool for the Job means a saving in time which means dollars in your pocket. As an example, look at these door handle tools. Here's a fussy job that can cost you a lot of time. With the proper tool you can do a better job more profitably and have a pleased customer. Look to SNAP-ON to help you make more money.

- D S-9478B Door Handle Tool. For 1955-1962 Chrysler line cars. These cars are using a new type spring clip which cannot be disengaged with any tools previously available. The two prongs are ⅝" thick and are tapered for easy entry between handle and plate. A raised wall contacts the the spring clip forcing it out of the shaft groove to release handle. Offset gives hand clearance.

- E S-9538A Door Handle Tool. For all late model cars except Chrysler products. Outward appearance of old and new style handles is identical, but inside flange construction is different. Hook end of tool works on old style handles. Time saver.

- F A-160A Door Handle Tool. For removal of clip-type retainers on GM and '51 and later Ford, Mercury and Lincoln. Fits both old and new style retainers. Offset handle provides clearance. Clip held by jaws which are forced over clip when tool is inserted.

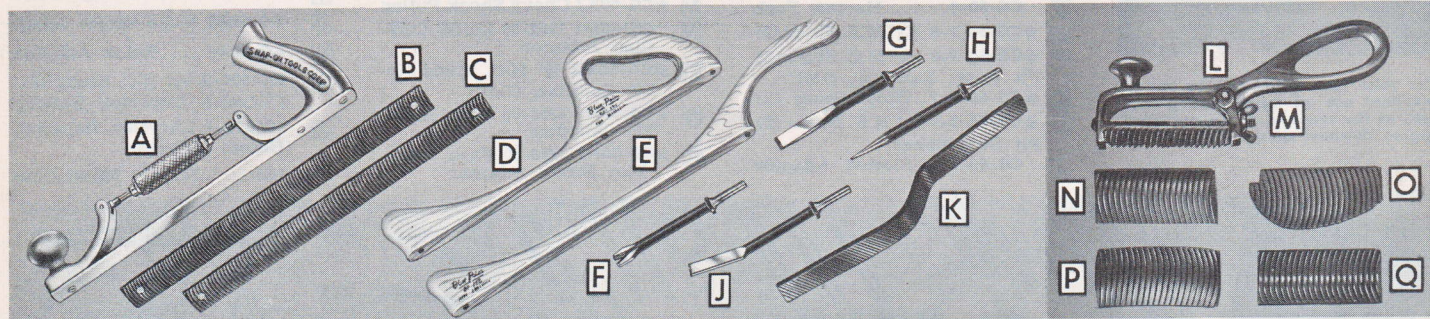
- G DHP-8A Door Handle Pliers. Used to remove clip type retainers on General Motors cars. Slim jaws slip between handle and escutcheon plate to hold clip. Handles offset to provide clearance. 7½" long.

- H A-161A Door Panel Remover. For fast, easy way to remove inside door panel on GM, Ford and Chrysler products. Forked end is offset to provide prying action for nail and spring clip removal. 5" long shaft, plastic handle, overall length 8¾". Assures minimum of nail and clip breakage.

HIGH QUALITY SOLDER PADDLES

Made of choice hard maple to assure long, clog-free service. Work ends boiled in tallow to preserve and lubricate paddles.

- J BF-11 Flat Paddle.....4"x1½" blade.
- K BF-12 Flat Paddle.....4"x1¼" blade.
- L BF-13 Round Paddle.....5"x1" blade.
- M BF-14 Long Flat Paddle.....6"x1½" blade.



FLEX FILE HOLDER

- A ★BF-775B Flexible File Holder—as comfortable to hold as a plane. Light and rigid for accurate gauging. Ruggedly flexible over a wide range of concave and convex filing operations. Big aluminum handles provide ample grip for extra large hands—high clearance turnbuckle protects knuckles. Heat treated turnbuckle screws insure positive adjustment. Hinges are chatterproof. Permanently attached strap takes 14" files.

- B ★14-V Flat Flexible curved-tooth file, 8 teeth to the inch.
- B ★14-V7 Flat Flexible curved-tooth file, 7 teeth to the inch.

HALF-ROUND VIXEN FILE

- C ★14-VHR Vixen Shell Type Half-Round File. Use where a milled-tooth half-round file is required. It can be used on bearing work or on body work. 8 teeth per inch on convex side only. File length is 14". Fits BF-775B Flexible File Holder.

STRAIGHT WOOD FILE HOLDERS

Made from choice hard maple for light weight and durability. Narrow enough to allow file overhang on both sides. File can be convex by inserting wedge under center. Use with the 14-V or 14-V7 14" Vixen files listed at left.

- D BF-141 Saw Handle Type File Holder.
- E BF-142 Straight Type File Holder.

TOOLS FOR PNEUMATIC HAMMERS

Fit most models of pneumatic hammers now in use. Deliver full power to cutting edge. Made of shock resistant alloy steel with long lasting cutting edges—hardened end-to-end for greater durability.

- F ★PH-51 Metal Panel Cutter 6" long.
- G ★PH-52 Flat Chisel 6½" long, ⅝" blade.
- H ★PH-53 Tapered Punch 6½" long, ⅝" point.
- J ★PH-54 Muffler Tool 7" long. Will slice through bushings, cylinder sleeves, muffler pipes without damage to other parts.

BUMPING FILES

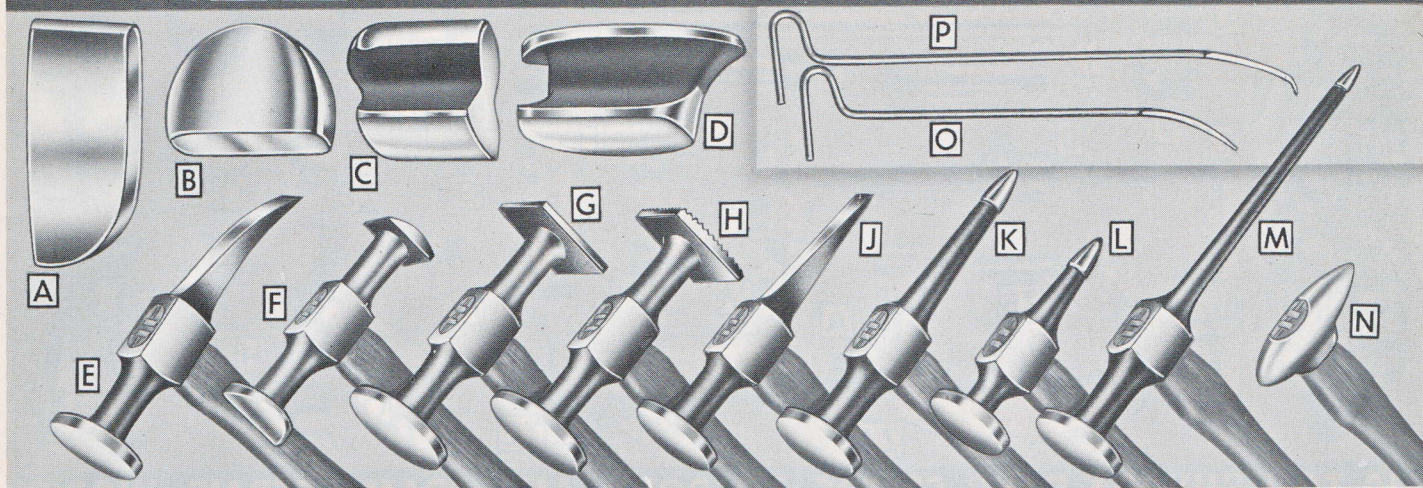
- ▲ K ★HB-303 Bumping File Set. These files are 12" long and 1½" wide, and are used like hammers with dolly blocks to slap out dents in bodywork. They do not expand the metal but rather tend to contract it to original shapes. Set contains three files below.
- ▲ ★HB-2088.....Flat, Coarse Cut File.
- ▲ ★HB-2089.....Flat, Medium Cut File.
- ▲ ★HB-2090.....Half-Round Medium Cut File.

VIXEN REVEAL FILES

★HB-606 Vixen Reveal File Set. One of the most useful sets for body and fender work. Smooths out ledges and corners. Includes—

- L HB-152.....Vixen Reveal File Holder.
- M ★HB-153F.....Half-Round, Shell File.
- N ★HB-154F.....Square-Cornered Bent Edge File.
- O ★HB-155F.....Flat, Rounded Edge File.
- P ★HB-156F.....Half-Round, Bent Shell File.
- Q ★HB-157F.....Half-Round, Moulding File.

® Snap-on BODY TOOLS ARE THE FINEST YOU CAN BUY



DESIGNED TO DO AN EFFICIENT JOB AND GIVE YOU LASTING SATISFACTION

A BF-710A Toe Dolly. With its many curves and edges, this tool fits a great many of the odd curves found on modern streamlined cars. 4 $\frac{3}{4}$ " long, 2 $\frac{1}{4}$ " wide, 1 $\frac{1}{16}$ " high. Wt. 2 $\frac{1}{2}$ lbs. A time saver on many jobs.

B BF-711 Heel Dolly. A good basic tool for it handles a majority of jobs on new or old cars. 3" long, 2 $\frac{1}{4}$ " wide, 1 $\frac{3}{8}$ " high. Weight 2 $\frac{1}{4}$ lbs. Should be in every body repair kit.

C BF-712 General Purpose Dolly. Especially designed for deep skirted fenders. Semi-flat surface is useful for shrinking work where heat is used. 3" long, 2 $\frac{1}{4}$ " wide, 2 $\frac{1}{4}$ " high. Weight 2 $\frac{3}{4}$ lbs.

D BF-714 Anvil Dolly. The most essential and useful dolly made. The streamlined wide curved faces fit contours of all portions of the body and door panels. Provides ideal surface for most fenders. Small oval is perfect for outside curves when hammer is used on the inside of the work. 4" long, 2 $\frac{3}{4}$ " wide, 2 $\frac{1}{4}$ " high. Anvil faces 1 $\frac{3}{4}$ " by 4"; 2 $\frac{3}{4}$ " by 3". Wt. 2 lbs., 14 oz.

E BF-608 Short Curved Cross Peen Hammer. Curved peen is for use under rolled edge fenders. Has perfect finishing face for use as regular dinging hammer. 5 $\frac{3}{16}$ " long, 1 $\frac{5}{8}$ " round face, $\frac{5}{8}$ " by $\frac{1}{16}$ " peen end. Wt. 11 $\frac{1}{2}$ oz.

F BF-615 Reverse Curve Light Bumping Hammer. The odd contours of fenders and bodies in the new automobiles with the "sculptured" look require a tool of this design. Head is 4" long, one face is 1 $\frac{1}{16}$ " square, the other is 1 $\frac{1}{16}$ " diameter round. Each face has a 1 $\frac{1}{16}$ " radius curve for use on reverse curves on fenders, headlights, doors, etc. 12" handle, wt. 12 oz.

G BF-606 Wide Face Shrinking Hammer. Wide faces are essential for shrinking operations on heated metal panels. Both faces absolutely flat to prevent stretching metal. Also used for panel bumping. 4 $\frac{1}{4}$ " long 1 $\frac{7}{8}$ " round face and 1 $\frac{5}{8}$ " square face. Wt. 17 ozs.

H BF-610A Shrinkage Hammer. Has extra wide faces for shrinking and working large surfaces. Square 1 $\frac{9}{16}$ " face has cross-milled serrations for shrinking and 1 $\frac{7}{8}$ " diameter round face is smooth for finishing. 4 $\frac{1}{4}$ " long. Wt. 1 lb.

J BF-604 Wide Nose Cross Peen Hammer. Excellent for finishing. Cross peen is useful for working in sharp corners around mouldings and for caulking. 5 $\frac{1}{2}$ " long, 1 $\frac{5}{8}$ " round face. Peen end $\frac{5}{8}$ " wide, $\frac{1}{16}$ " thick. Weight 11 $\frac{1}{2}$ ozs.

K BF-603 Long Low Spot Pick Hammer. Especially adapted for bumping out small, low spots while filing. Saves solder. Recommended for use wherever metal is covered with sound-proofing materials, such as tops, bodies and doors. 6 $\frac{1}{4}$ " long, 1 $\frac{19}{32}$ " round face. Pick tapers to a $\frac{1}{16}$ " point from a $\frac{1}{16}$ " base. Wt. 12 $\frac{1}{2}$ ozs.

L BF-611 Picking and dinging Hammer. For smoothing out small dents and for general dinging work. 4" long, 1 $\frac{15}{32}$ " round face, $\frac{1}{16}$ " point tapered from $\frac{1}{16}$ " base. Wt. 8 ozs.

M BF-614 Long Picking Hammer. 6" long picking shaft with rounded point . . . good for turret and deep fender work. The round flat face is 1 $\frac{5}{8}$ " diameter. Overall head length is 8 $\frac{5}{8}$ ". Wt. 1 lb. Handle is 17" long.

N BF-616 Pick Hammer. The short head, only 2 $\frac{3}{4}$ " long and $\frac{7}{8}$ " wide, together with the 16" long handle makes this tool especially useful on door panels and other limited access areas. Head is chrome plated. Wt. 9 $\frac{1}{2}$ " ozs.

FIRST GRADE HICKORY HANDLES

Standard 12" length handles used in these hammers have octagon grip to keep tool from slipping. Handles are first grade white hickory, available in 12" and 17" lengths.

★BF-603-2	12" long.	{ For BF-603, BF-604, BF-606, BF-608, BF-610, BF-614.
★BF-614-2	17" long.	
★BF-611-2	12" Handle.	For BF-611.

TOUGH, FORGED BODY PICKS

For pushing out small dents with a twisting or prying action in very tight spots. Forged and heat treated to give strength and toughness. Handle end aids in manipulation.

O BF-1106 26 $\frac{1}{2}$ " long with slight curve, sharp point.

P BF-1107 31" long with curve and point at right angles to shaft.

HAMMERS WITH FIBERGLASS HANDLES

Made of unidirectional fiberglass, the strongest known material for hammer handles. It is much stronger than wood, yet has the "feel" and "bounce" of finest hickory. Impervious to oil, gas, grease and all common chemicals, will not dryrot, warp or splinter. High or low temperatures do not affect them. The red handle grips are of a shock-absorbing, non-slip plastic, light in weight and comfortable to hold and use.

Q BF-603PH Spot Pick Hammer. Head is similar to **K** BF-603 above.

R BF-611PH Picking and Dinging Hammer. Head is similar to **L** BF-611 above.

S BF-608PH Short Curved Cross Peen Hammer. Head is similar to **E** BF-608 above.

FIBERGLASS HANDLE KITS

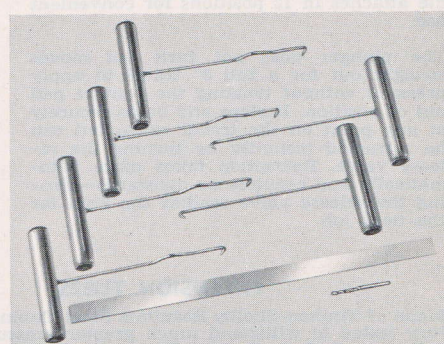
For use on any hammer. Kit consists of a fiberglass handle, plastic ferrule collar, curved and flat ferrule caps, sealing tape, two tubes of "Nuplabond", stirring stick, instructions and hammer handle size chart.

BHP-120 12" Handle Replacement Kit.

BHP-160 14" Handle Replacement Kit.

HANDLE BONDING KIT

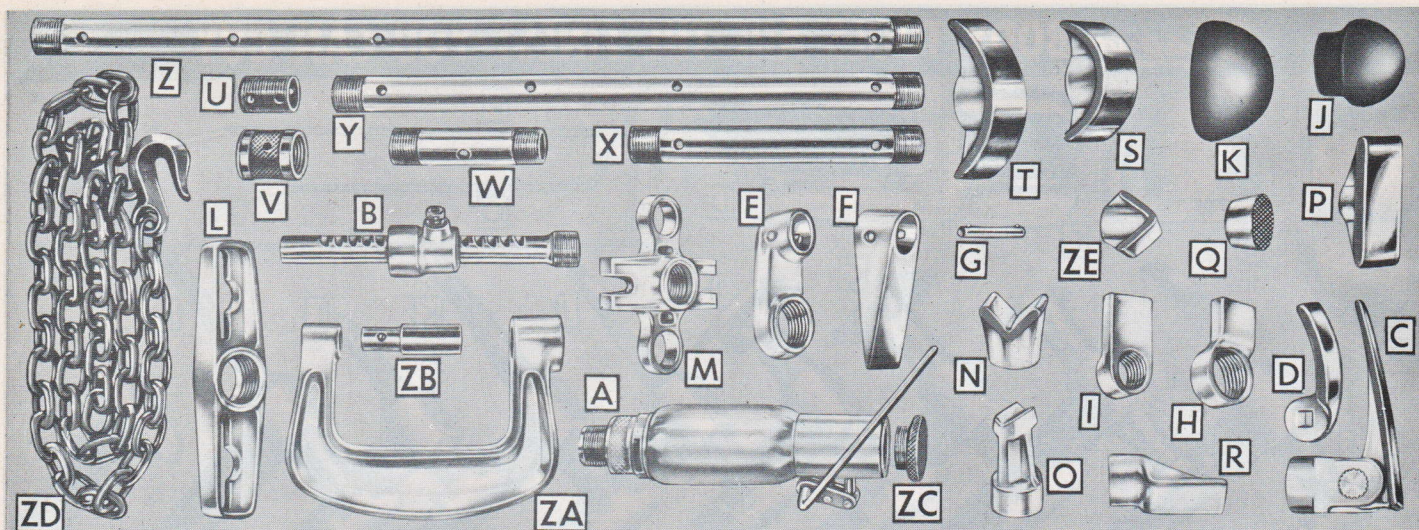
★BHP-30K Replacement Bonding Material Kit. Needed when a fiberglass handle is slightly too small for hammer head and additional material is needed to supplement the replacement kit or when original supply of Nuplabond is improperly mixed. Kit contains one tube each of Nuplabond "A" and "B".



PULL ROD SET DOES A FAST JOB

Save time on many body jobs by drilling $\frac{3}{4}$ " holes and pulling metal to original shape from the outside. No need to remove headliners, upholstery, etc. Do the job in a fraction of former time. Pull Rods have formed relief to prevent distortion of the hole and a $\frac{3}{8}$ " flat area to lift metal without distortion. Pick Pulls have a thin point to enter between closely spaced panels. Instructions furnished with each set.

★BF-200 Pull Rod Set includes 4 Pull Rods; 2 Pick Pulls; 1 stainless steel straight edge and 1 high speed $\frac{3}{4}$ " drill.



10-TON "HYDRA-PAK" SPEEDS UP BODY AND FRAME REPAIR WORK

GIVES YOU 10 TONS OF POWER CONTROLLED TO A FRACTION OF AN INCH

10-Ton Hydra-Ram Combines Pump and Ram in One Unit

Permits you to apply hydraulic power speedily and accurately—controlled to a fraction of an inch. Using "Hydra-Pak" is as simple as using a hand jack—the hydro-unit is right in front of you, on the tool itself where you can regulate power as you watch the job . . . where one man can handle the tool and job all by himself and do better, faster work because he can see what he does as he does it. "Hydra-Pak" has no hose for transmission of fluid, no motors, no remote power connections.

FEATURES THAT HELP YOU WORK FASTER—SAFER

A "HYDRA-RAM"

BJ-10-1E "Hydra-Ram". This self-contained hydraulic power unit develops ten tons of pressure and operates at full efficiency regardless of the position in which it is used. That means you can use it on any job in whatever is the most useful working hook-up and placement and know that it will deliver its full power under complete control at all times. The pump handle attaches in 12 positions for convenient use.

The plunger does not turn but moves straight out for a full 6" travel to apply pressure without twisting the contact pad out of position. It stops and holds securely at any point on the travel range but can be retracted instantly by turning the release valve. Retraction takes place automatically and requires no assistance—closing the release valve readies the Ram for the next job.

EXTENSION TUBES

Made of Timken-Shelby Seamless Steel Tubing and laboratory tested to withstand much greater pressures than you will ever apply with the "Hydra-Ram". They are quickly and easily attached to the "Hydra-Ram" by means of free-turning threaded ends that are protected against burring by a special safety step at the end of the thread. Holes are provided at intervals for positioning tube clamp units. Pins lock the clamps onto the tubes.

ALLOY STEEL ATTACHMENTS

Malleable and special alloy steels are used in all "Hydra-Pak" attachments and pads, and the castings are carefully machined and surface-finished to assure safe, dependable operation and long service life . . . every necessary type of attachment is included, and hundreds of different combinations and setups can be made in a minimum of time to fit every kind of job. These attachments are threaded to fit the "Hydra-Ram," and outer ends of threads are protected by a recessed safety step.

The Right Pressure Because You Always See the Work

"Hydra-Pak" gives you precision hand-control of 10 tons of power, applied through various combinations of specialized attachments to push, pull, bend, spread, press, lift and clamp . . . controlled power for every operation necessary in body rebuilding work. Cutting power is like shutting a valve . . . the "push" stops instantly, no easing off, no over riding. "Hydra-Pak" also retracts automatically . . . saves time on each set-up.

B "KWIXTENSION"

BJ-10-2 "Kwixtension". This exclusive "Hydra-Pak" feature is a special attachment which provides a lightning-fast extension of tubes when making a set-up on the job. The "Kwixtension" provides an additional eight inches of tube length with fourteen stop positions before a change-over of extension tubes is necessary. You simply slide it out to the best stop position and then operate the "Hydra-Ram" Power Unit. To retract the unit, just lift the knurled knob and slide the extension back through the housing.

C ADJUSTABLE SPOON

The spoon blades are quickly attached to the holder in any one of twelve working positions. Adjustments in position can be made without removing the set-up on the job. This is a great time saver as the blade position can be gradually adjusted as the job progresses. Slips into very restricted working spots to push out panels, etc.

Choice of Three Sets

The BJ-10 Body Shop Set includes all the parts listed below. The other two sets have been selected to provide working adaptability for the average body shop job, additional units can be purchased as needed.

BJ-10 Body Shop "Hydra-Pak" Set.

BJ-10-M Basic Shop "Hydra-Pak" Set.

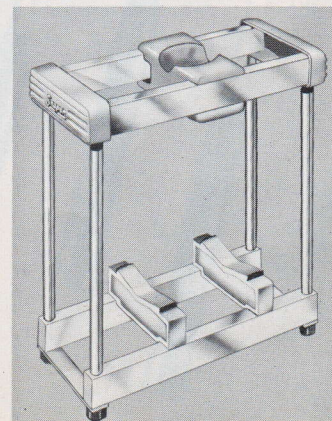
BJ-10-J Car Dealer's "Hydra-Pak" Set.

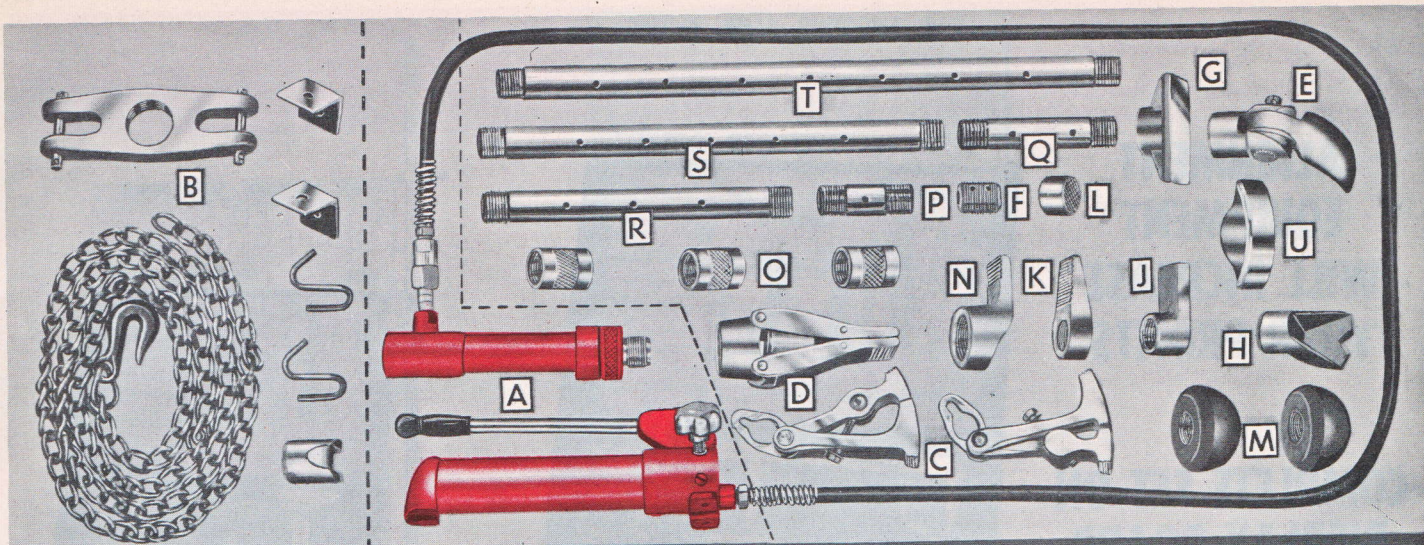
Parts That Make Up "Hydra-Pak" Sets

Key Letter	Stock No.	Description	BJ-10 Set	BJ-10-M Set	BJ-10-J Set
A	BJ-10-1E	"Hydra-Ram"	1	1	1
B	BJ-10-2	Kwixtension	1	—	—
C	BJ-10-3	Adj. Spoon with BJ-10-3-2 Blade	1	1	1
D	BJ-10-3-3	Small Blade	1	—	—
E	BJ-10-4-1	Clamp Head	1	1	—
F	BJ-10-4-2	Clamp Pin	1	1	—
G	BJ-10-4-3	Clamp Toe	2	2	—
H	BJ-10-5-1	Spreader Toe	1	1	—
I	BJ-10-5-2	Plunger Toe	1	1	—
J	★ BJ-10-6	Pad (Small)	1	1	1
K	★ BJ-10-7	Pad (Large)	1	1	—
L	BJ-10-8	Chain Plate	1	—	—
M	BJ-10-9	Chain Plate	2	—	—
N	BJ-10-10	90° V-Base	1	1	1
O	BJ-10-11	90° V-Base	2	—	—
P	BJ-10-12	Flat Base Pad	1	1	1
Q	BJ-10-13	Serrated Pad	1	1	1
R	BJ-10-14	Wedge End	1	1	1
S	BJ-10-15	3" Radius Pad	1	1	1
T	BJ-10-16	5" Radius Pad	1	1	1
U	BJ-10-17	Pad Coupler	1	1	1
V	BJ-10-18	Tube Coupler	1	1	1
W	BJ-10-21	6" Steel Tube	1	1	1
X	BJ-10-22	12" Steel Tube	1	1	1
Y	BJ-10-23	24" Steel Tube	1	1	1
Z	BJ-10-24	36" Steel Tube	1	1	1
ZA	BJ-10-27	"C" Clamp	1	—	—
ZB	BJ-10-27-1	Clamp Adaptor	1	—	—
ZC	BJ-10-28	Base Plate	1	—	—
ZD	★ BJ-10-29	3/4" Alloy Chain	2	—	—
ZE	BJ-10-31	Angle Base Pad	1	1	—

ARBOR PRESS FOR USE WITH BJ-10-1E HYDRA-RAM

BJ-10-35 Arbor Press. Here is a powerful Arbor Press that has unlimited use in the garage, the industrial plant and in the maintenance shop where positive, controlled power is needed. In the garage it is used for body work, to straighten bumpers, braces, tie rods, etc., for installing bearings, pressing gears off shafts. In the industrial plant it is used for general assembly work where tight fits require even distribution of power. In maintenance it has a hundred and one uses. Designed specially for use with SNAP-ON BJ-10-1E "Hydra-Ram." However, the Hydra-Ram is not included and must be ordered separately. Press can be bolted to any bench top, plates slide to any desired position. Dimensions are: maximum distance from plunger to "V" blocks 13 1/2". Area between uprights 16 1/2" x 6 1/2".





Snap-on FOUR TON BODY JACK

Snap-on

4-TON BODY JACK DOES AMAZING NUMBER OF JOBS

You can do every type of job with this remarkable 4-Ton Body Jack. You push with the pads and the toes—you pull with the Pull Jack and the fender clamps—you spread with the duck-bill spreader. The Ram is short and slender and can be used in very close working quarters.

The 6 foot rubber hose allows placement of the Ram in the best working position and safe pump operation for the user. Lets you work where you can best observe results.

Everything is here that you need, all attachments, pads, tubes, toes, spreaders, chain, etc.—everything—and all are made of high quality materials to assure long rugged life. You start making money immediately when you put this SNAP-ON 4-Ton Body Jack to work for you.

STAND KEEPS ALL JACK PARTS HANDY!

This handsome, sturdy Storage Stand eliminates the chore of groping in a tool box for body jack parts and fittings. The smooth-rolling, large casters (not included with Stand, must be ordered separately if desired) make your Body Jack Set much more mobile and easy to transport from job to job, even over rough, uneven floors. Stand is made of wood, built to withstand hard usage. Has various hooks and platforms to hold all parts of the BJ-4 Set. Parts are easily and quickly removed, missing parts are spotted immediately.

BJ-4-S Complete 4-Ton Jack Set consisting of all 35 parts listed below, on ASP-4 Storage Stand—but **without** casters.

GA-88 Set for four casters for ASP-4 Storage Stand—must be ordered separately if desired.

BJ-4 4-Ton Body Jack Set consisting of 35 parts only, without Storage Stand.

DESCRIPTION OF INDIVIDUAL BODY JACK PARTS

A BJ-4-2X Ram, Pump and Hose Assembly.

Consisting of the following four units:
BJ-4-1 Ram. Overall length is 8 $\frac{3}{4}$ " and it has a 4" maximum stroke. Free flowing open channels permit rapid flow of oil and smooth, powerful operation.

BJ-4-2A Pump. An overload safety device in mechanism protects parts and equipment while building up a 4-ton pressure on the work.

BJ-4-3A Hose. $\frac{3}{16}$ " I.D. special oil resistant rubber with imbedded steel mesh reinforcement.

BJ-4-4 Hose Connector. Permits removal of tube without loss of fluid from Ram.

B BJ-4-5 Pull Jack. Consisting of the following nine units:

BJ-4-5-1 Puller Cap

BJ-4-5-2 Yoke

BJ-4-5-3 Chain

BJ-4-5-4 S-Hooks (2 included)

BJ-4-5-5 Angle Irons (2 included)

BJ-4-5-6 Yoke Pins (2 included)

C BJ-4-6 Fender Clamps, have milled jaws to grip onto metal and fender bead. Have flexible linkage. (2 included).

D BJ-4-7 Spreader, screws right onto ram. 3" spread. Gets into deep sections, replaces prying and hammering.

E BJ-4-8 Adjustable Body Spoon is quickly attached, blade may be adjusted to many working positions as work progresses.

F BJ-4-9 Internal Connector for attaching pads to base of Ram.

G BJ-4-10 Base, has flat pressure surface.

H BJ-4-11 "V" Base, permits pressing against protruding bolts and similar objects.

J BJ-4-12 Flat Spreader Toe, to work in recesses.

K BJ-4-13 Tapered Spreader Toe. Has a serrated face. Grips against the surface of the work to reduce possibility of slipping.

L BJ-4-14 Pad with serrated face to prevent slipping, use at end of extension tubes.

M BJ-4-15 Rubber Pads avoid damage to metal parts, protect finish (2 included).

N BJ-4-16 Flat Spreader Toe, with serrated face.

O BJ-4-17 Tube Coupling. (3 are included in the set.)

Extension Tubes. These tubes are made of seamless steel tubing with free turning threads at both ends. Have special safety step at end of thread to prevent burring.

P BJ-4-18 Extension Tube, 3" long.

Q BJ-4-19 Extension Tube, 5" long.

R BJ-4-20 Extension Tube, 10" long.

S BJ-4-21 Extension Tube, 15" long.

T BJ-4-22 Extension Tube, 20" long.

U BJ-4-23 Ram Base or pad with a curved 4" radius. Very useful in many places.

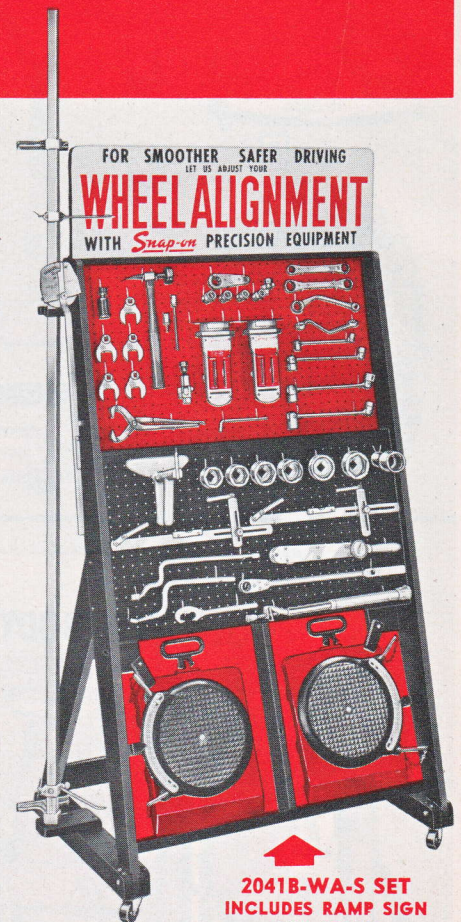
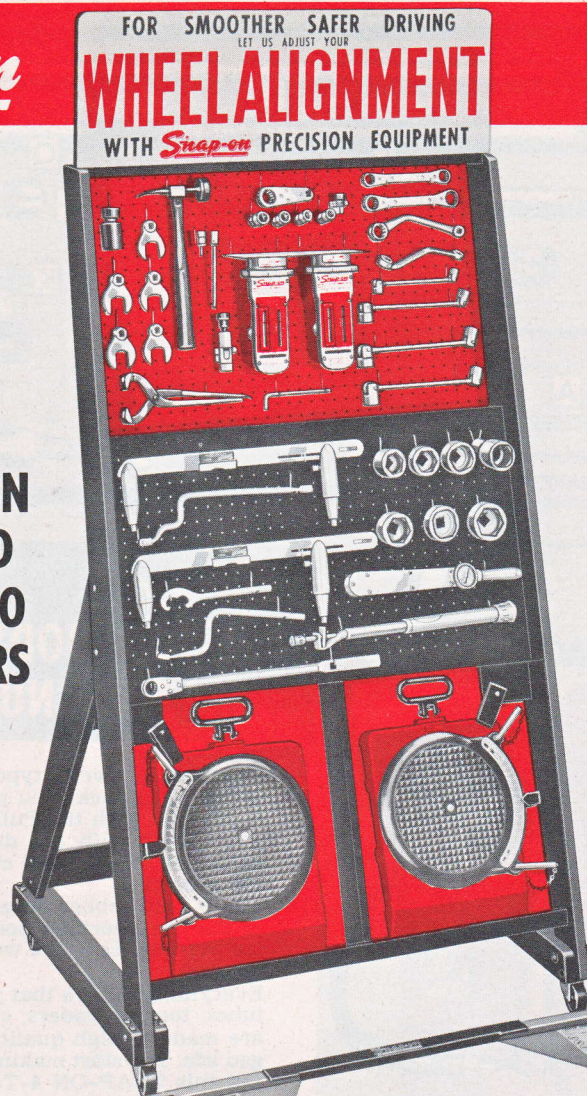
Snap-on®

ALIGNMENT EQUIPMENT WILL INCREASE YOUR PROFITS

COMPLETE SET ON DISPLAY BOARD SELLS SERVICE TO YOUR CUSTOMERS



RAMP SIGN
AND STAND



2041B-WA-S SET
INCLUDES RAMP SIGN
AND STAND

2011B-WA-S MASTER DELUXE SET INCLUDES RAMP SIGN AND STAND

IT'S PORTABLE: Use it on any level spot in the shop. Paint positioning marks for turntables . . . there's no need to tie up valuable space permanently—between jobs the space is available for other work.

IT'S SIMPLE: Anyone can easily read the precision etched vials in the magnetic gauge and the clearly marked degrees on the turntables. No complicated computations are necessary.

IT'S ACCURATE: None more so, because the magnetic gauge is held to the exact centers of the only machined surface of the wheel.

MASTER DRIVE-ON TOE GAUGES

Sure-fire money makers! Not only is the Master Toe Gauge one of the fastest and simplest toe gauges you can buy, but also extremely accurate. It's fast because you do little more than drive the vehicle over the gauge to get a reading. It's simple because the gauge reading is the complete answer—it even tells you how many turns to make on the tie rods. No computations or toe specifications to bother with. Any mechanic can learn to use it in a matter of minutes, and it's highly accurate because it allows toe to be checked under actual driving conditions.

This SNAP-ON equipment not only brings in big profits on wheel aligning work but also helps you sell other services and parts. Shops installing aligning and balancing equipment usually experience increased sales of tires in addition to parts such as shock absorbers, tie rods, wheel bearings, support arms, etc., also brake jobs and lubrication.

Why pass this profitable business on to other establishments when, in a few minutes time, you can show a customer exactly what is causing erratic steering or excess tire wear—and sell another profitable aligning job.

This low cost, highly accurate equipment pays for itself in short time. It does not tie up valuable floor space and is so simple to use that any mechanic can quickly become expert in checking alignment. Service station operators, as well as the biggest city shops, are users of this equipment.

The sturdy steel frame is very durable and the thrust blocks are solid oak. The steel treadles have rust-resistant plating and are easily cleaned. As the wheels drive over the gauge the action of the tires against the treadles activate a pointer and scale which shows whether the toe-in is correct and if not, how much tie rod adjustment to make.

WA-57 Master Toe Gauge for passenger cars, is 85" long, 14" wide.

WA-90 Master Toe Gauge for trucks is 96" long and 14" wide.

To help you bring in potential customers use the ramp sign outside your shop and place the attractive tool display board where it will act as a constant reminder to your customers that you are fully equipped to render this special service. It will act as a silent, constant salesman to help secure more jobs.

It stores all of your wheel aligning tools in a convenient manner, keeps them segregated from your other tools, out of the way until needed and then instantly available and accessible to do the work speedily and efficiently.

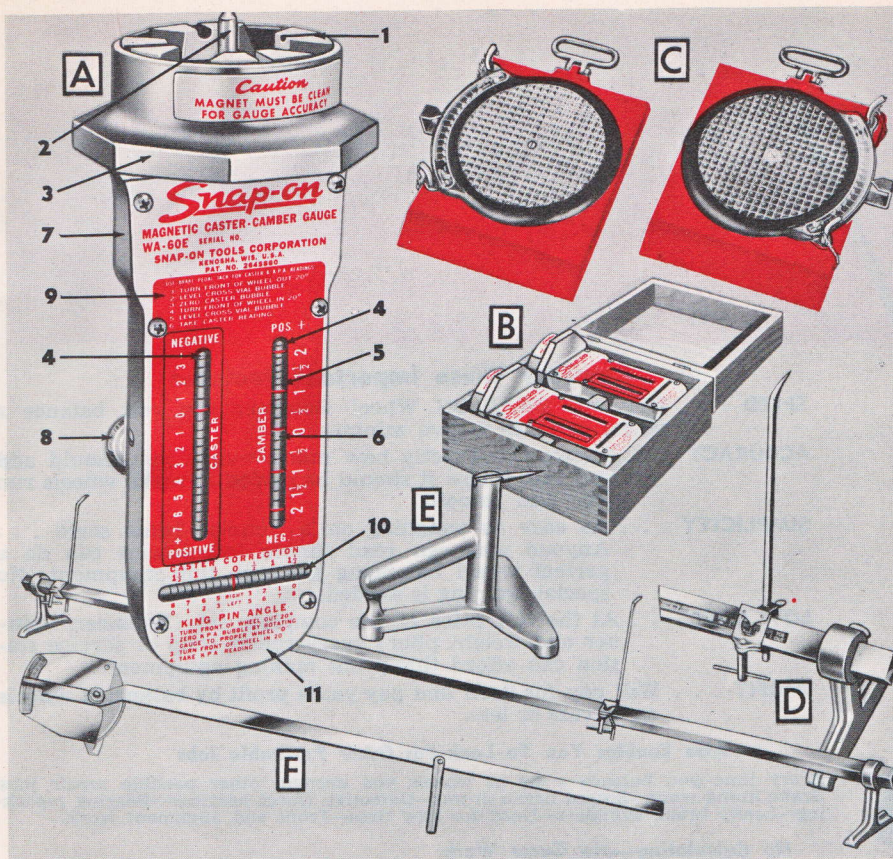
Equipped with swivel casters, the entire set of tools can be easily rolled to the desired working location and back again to its display spot. Both display boards are built very strong and rigid—one is designed to hold the Master Drive-on Toe Gauge, the other to hold the Trammel Bar Toe Gauge. Set contents are listed on opposite page.

SIDEWALK SIGNS

Attractive, easy to read attention getters that advertise your Wheel Balancing and Alignment Service. 20 gauge steel with red, black and white sign on both sides in easy to clean baked-on enamel. The stand is tubular aluminum with steel base. These sidewalk signs will give years of profitable publicity.

SS-217A Wheel Balancing and Alignment Sign shown with Sets above. Signs do NOT include the Ramp Standard.

SS-218A Ramp Standard (does not include sign).



ONE OF THESE SETS WILL MAKE MONEY FOR YOU

Stock No.	Description	See Page No.	2010B-WA-S Master Set	2011B-WA-S Master Deluxe Set	2040B-WA-S Basic Set	2041B-WA-S Standard Set
AWL-8	1/4" Hexhead Wr. for caster-camber	83	✓	✓	✓	✓
FAL-8	1/4" Caster-Camber Hexhead Socket	23	✓	✓	✓	✓
FA-10B	5/16" Caster-Camber Hexhead Socket	23	✓	✓	✓	✓
FH-1618B	1 1/2" & 3/16" Flexhead Wrench	55	✓	✓	✓	✓
FH-2024A	5/8" & 3/4" Flexhead Wrench	55	✓	✓	✓	✓
FH-2226	1 1/8" & 13/16" Flexhead Wrench	55	✓	✓	✓	✓
FH-2428	3/8" & 7/8" Flexhead Wrench	55	✓	✓	✓	✓
GA-73A	Brake Pedal Jack	82	✓	✓	✓	✓
GCP-10	Grease Cap Tool	84	✓	✓	✓	✓
R-2022	5/8" & 1 1/8" Ratcheting Boxcock	55	✓	✓	✓	✓
R-2428	3/4" & 7/8" Ratcheting Boxcock	55	✓	✓	✓	✓
S-6202	Corvair Ball Joint Socket	76	✓	✓	✓	✓
S-6203	Chevy-Corvair Caster-Camber Wrench	83	✓	✓	✓	✓
S-6302	Valiant Ball Joint Socket	78	✓	✓	✓	✓
S-8175	1 1/4" Crowfoot Caster-Camber Wr.	83	✓	✓	✓	✓
S-8179	Ball Joint Suspension Socket	76	✓	✓	✓	✓
S-8272	1 1/4" Crowfoot Caster-Camber Wr.	83	✓	✓	✓	✓
S-8366	1 1/8" Hex Torque Wrench Adaptor	83	✓	✓	✓	✓
S-8661A	1 1/8" Crowfoot Caster-Camber Wr.	83	✓	✓	✓	✓
S-8662A	1 1/8" Crowfoot Caster-Camber Wr.	83	✓	✓	✓	✓
S-8679A	Ball Joint Suspension Tool	80	✓	✓	✓	✓
S-8686A	3/4" Caster-Camber Wrench	83	✓	✓	✓	✓
S-9156	1 1/4" Crowfoot Caster-Camber Wr.	83	✓	✓	✓	✓
S-9365A	Ball Joint Suspension Socket	80	✓	✓	✓	✓
S-9479	Ball Joint Suspension Socket	80	✓	✓	✓	✓
S-9545	1 1/4" Caster-Camber Torque Adp't.	83	✓	✓	✓	✓
S-9835	Ball Joint Suspension Socket	76	✓	✓	✓	✓
S-9836	Ball Joint Suspension Socket	76	✓	✓	✓	✓
S-9837	1 1/4" Caster-Camber Torque Adp't.	83	✓	✓	✓	✓
SI MB-280	7/16" Olds Caster-Camber Flexsocket	83	✓	✓	✓	✓
SS-218A	Ramp Standard	119	✓	✓	✓	✓
SS-217A	Wheel Alignment Ramp Sign	119	✓	✓	✓	✓
TQ-150	1 1/2" Sq., Dr., Torqometer—150 Ft. Lb.	47	✓	✓	✓	✓
TR-250	Wheel Cover Tool	84	✓	✓	✓	✓
WA-10	Tie Rod Adj., Tool	83	✓	✓	✓	✓
WA-20	Torsion-Aire Height-Gauge Set	80	✓	✓	✓	✓
WA-52B	Wheel Angle Gauge	119	✓	✓	✓	✓
WA-57	Master Drive-on Toe-in Gauge	119	✓	✓	✓	✓
WA-62A	Set of two Turntables	119	✓	✓	✓	✓
WA-151A	Seven foot Trammel Bar	119	✓	✓	✓	✓
WA-155	Tire Scriber	119	✓	✓	✓	✓
WA-306A	Caster-Camber Torque Adp't Set	83	✓	✓	✓	✓
WA-602E	Set of two Magnetic Gauges	119	✓	✓	✓	✓
WAB-101	Merchandising Stand	119	✓	✓	✓	✓
WAC-2A	Torsion-Aire Height-Gauge Set	80	✓	✓	✓	✓

COMPLETE WHEEL BALANCING AND ALIGNMENT SETS

To do a complete job on wheel alignment and in wheel balancing combine the 2041B-WA-S Standard Wheel Set or the 2011B-WA-S Set with the WB-303A Wheel balancing Set shown on Page 120. For your convenience we list the combinations here:

2020B-WA-S Master Deluxe Alignment and Balancing Set consisting of the 2011B-WA-S Master Deluxe Set above and the WB-303A Balancing Set on Page 120.

2021B-WA-S Standard Alignment and Balancing Set consisting of the 2041B-WA-S Standard Set above and the WB-303A Balancing Set on Page 120.

IMPORTANT FEATURES OF THE GAUGES AND TURNTABLES

A MAGNETIC GAUGES FOR CAMBER-CASTER-KING PIN ANGLE

1. **Alnico Magnets.** Permanent and powerful. May be removed if damaged and new magnets inserted.
2. **Centering Plunger.** Fits spindle center hole.
3. **Octagon Housing.** Prevents gauge rolling.
4. **Precision Ground Vials.** Evenly spaced markings.
5. **Replaceable Vial Assemblies.** Easily removed.
6. **Etched Markings.** Cannot rub off.
7. **Thick Aluminum Housing.** Rugged yet light.
8. **Caster Scale Adjuster.** Even with greasy hands it's easy to turn adjusting screw.
9. **Directions.** Caster directions printed on gauge. For camber you level the gauge and read the camber vial.
10. **Leveling Bubble for Caster Correction and K.P.A.** End location is easily seen on cars with low fenders.
11. **King Pin Angle directions on gauge.**

Note: Use a GA-73A Brake Pedal Jack when checking Caster and King Pin Angle. Brake must be kept locked.

Note: Gauge carries a 90-day guarantee.

WHEEL ALIGNING GAUGE SETS

WA-700E Wheel Aligning Set. Including WA-602E Magnetic Gauge Set, WA-62 Turntable Set, WA-151A Trammel Bar, WA-155 Tire Scriber and WA-52B Angle Gauge.

B WA-602E Set of 2 Magnetic Gauges in WA-602-17 oak box. Most users prefer to use two gauges for faster and convenient work. **WA-60E One Magnetic Gauge in WA-60-17 Box.** **Truck Wheel Adaptors.** Adapt our Magnetic Gauges for use on various truck wheels.

WA-75A Truck Wheel Adaptor. 2 1/4" O.D., 1 1/16" I.D., 1 1/4" long.

WA-76A Truck Wheel Adaptor. 2 7/8" O.D., 2 3/8" I.D., 1 1/4" long.

WA-77A Set. One each of above adaptors.

WA-78 Adaptor. For use with SNAP-ON Magnetic Gauges on aluminum or magnesium hubs, unmachined hubs or the small diameter hubs on some "compacts" and foreign cars. 2 5/8" diam., 1/2" thick, center hole fits over spindle.

C BALL BEARING TURNTABLE SET

WA-62A Turntable Set. Consists of right and left-hand turntables shown above.

Full width top plates accommodates larger tires . . . it also covers the floating mechanism, keeping it free from dirt.

Pins hold plate in zero position while car is driven on. Pins are tapered for easy inserting and removal . . . offset bar gives a firm grasp, attached chains prevent loss.

Large divisions on gauge are clear and easy to read and pointer is set close to gauge to give accurate readings from any angle.

Tapered bevel on edge of top plate makes it easy to drive a car onto the plate . . . eliminates tendency for plate to slide forward away from the wheel.

Bracket holds handle onto the base . . . handle can be replaced easily if damaged.

WA-56 Set of two Turntable Bridges. Placed between the turntables and the Master Toe Gauge they eliminate the height difference and prevent nuisance of turntables skidding during the drive-on. Each is 4" x 11 1/16".

D TOE-IN TRAMMEL BAR

WA-151A Trammel Bar. 7 foot long 1 3/8" square box type extruded aluminum bar is mounted on adjustable cast aluminum legs. Two sliding pointers clamp onto the bar and lock with large "T" screws. These pointers contact the scribed tire mark and can be adjusted to approximately hub height for greatest accuracy. Gauge has an indicator for direct reading 3/4" both ways from center of scale.

E TIRE SCRIBER

WA-155 Tire Scriber. Used to scribe a fine line around the circumference of the tires prior to checking toe-in. Chrome plated, heavy cast iron base aids in holding scriber in position while the wheel is revolved against the spring loaded needle arm. Spring holds the needle point against the tire even though it may be uneven or rough.

F ANGLE GAUGE

WA-52B Angle Gauge. Used with the WA-151A Trammel Bar to set left front wheel in straight-ahead position before checking Toe-in . . . can also be used in place of turntables to measure wheel turn degree for caster and king pin angle check. Gauge is calibrated 25 degrees both ways from zero.

Snap-on WHEEL BALANCER

**FITS ALL PASSENGER CAR AND
LIGHT TRUCK WHEELS**

**This precise instrument tells you
HOW MUCH WEIGHT TO ADD AND WHERE**

Consider These Important Features

- SPEED . . .** With the SNAP-ON Wheel Balancer you can balance a wheel in three to five minutes.
- ACCURACY . . .** Shows you exactly how much weight you should add and just where it should be placed to make wheels run true and smooth.
- SIMPLICITY . . .** As easy as weighing on a common beam scale . . . Anyone who can read simple instructions can do a perfect wheel balancing job with this equipment. No special training is needed.
- LOW COST . . .** At the low price of the complete set (Balancer, Spinner and weight plier) every repair shop or service station can afford this profit making equipment.
- PROFIT . . .** Will pay for itself and pay you a profit by balancing wheels on 50 cars or less.

Also Enables You To Look For Other Profitable Jobs

Every time you balance a set of wheels you uncover other possible repair jobs. Brake lining work—Scored brake drums—Defective wheel bearings—Bearing repacking—Leaky brake cylinders—Need for new tires—Front end alignment work.

No Calculating—No Guess Work

The Sliding Weight Beam tells you how much weight is needed . . . the Switch Arm shows you exactly where to place the weights.

Calibrated weight beam has individual weight scales for 13", 14", 15", 16" and 17" diam. wheels. Four plated cones are furnished—two small cones for balancing front wheels with drum attached—two large cones for balancing rear wheels without drums.

The cones hold the wheel perfectly centered around the balancer spindle which rotates in ball bearings resting on the plated upright posts. The wheel will turn and rest with the heavy area at the bottom.

When switching rear wheels to the front attach the wheel to the front wheel drum and balance wheel and drum together.

When the sliding weight shows more than 2 ounces out of balance the weight to be added at each of the two points indicated by the switch arm should be divided and one half placed on the inside of the wheel. Using the SNAP-ON Balancer this is easily done and perfect balance obtained.

Heavy cast iron base provides stability for the operation and holds your wheel weights and wheel weight pliers. Four rubber wheel swivel casters permit the Balancer to be rolled easily.

WBK-2A SNAP ON Wheel Balancer
WB-303A Wheel Balancing Set. Includes the WBK-2A Balancer, WS-1 Spinner and the WWP-11 Wheel Weight Plier.

Snap-on

WHEEL SPINNER

**Helps Sell your Wheel
Balancing Service**

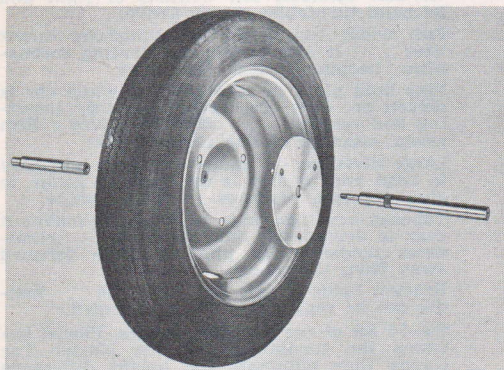
WS-1 Wheel Spinner

can turn a wheel 6000 R.P.M. intermittent duty . . . visually and dramatically showing car owner how unbalanced wheels can set up tremendous vibration which causes quick wear on parts, tires, etc., and makes driving hazardous and tiring.

After raising the wheel the Spinner is rolled up close so that the driving drum contacts the tire. Switch on the Spinner and when wheel reaches high speed withdraw the Spinner so that wheel action can be observed. Run it up close, switch off, and apply Spinner brake to stop the wheel. Motor is 1½ H.P., 115 Volt D.C. or A.C. 25 to 60 cycles. Draws 17 amps.



Small cones are used on front wheels with brake drums attached.



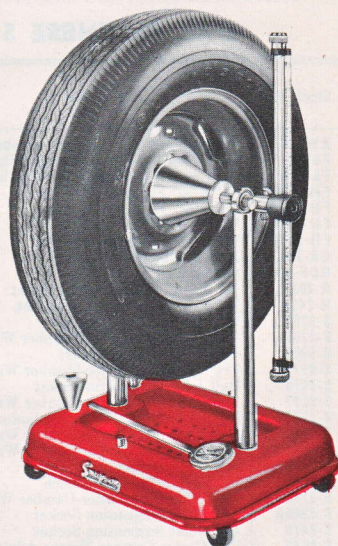
ADAPTOR SET FOR RENAULT

WBK-2-8S Renault Adaptor Set. Now you can balance Renault wheels quickly and accurately with the WBK-2 SNAP-ON Wheel Balancer. A new Adaptor Plate, complete with a special shaft assembly, holds the Renault wheel firmly, yet permits the wheel to rotate freely on the Wheel Balancer during the balancing operation.

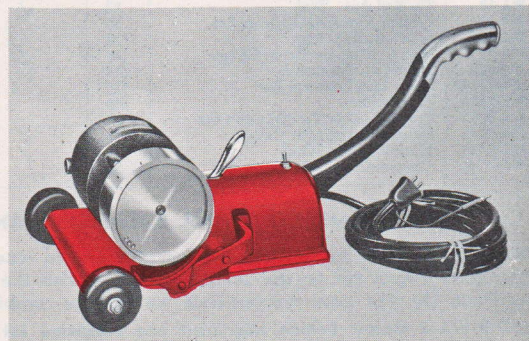
Three pins on the Adaptor Plate fit the wheel lug holes on the Renault wheel. The two-piece shaft threads together to hold the adaptor plate and wheel. The entire assembly of wheel, adaptor plate and shaft is then used in the usual manner with the WBK-2A Wheel Balancer. The speed, accuracy and simplicity of this Wheel Balancing Equipment combine to provide a Real Profit Package for you.

LARGE CONE SET FOR FORD AND DODGE TRUCK WHEELS

WBK-2-10L Set of two large cones, designed for use with our WBK-2A Wheel Balancer, will enable you to balance wheels of Ford and Dodge Trucks. The large openings on Ford and Dodge truck wheels make it necessary to use these larger cones in order to hold the wheels perfectly centered around the balancer spindle. Addition of this set of large wheel cones to your WBK-2A equipment will permit balancing all types of truck wheels. Order a set now, so you can provide complete wheel balancing service.



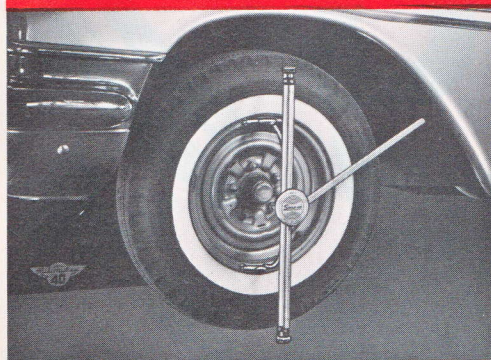
To balance wheels without drums the two large cones are used as shown above.



Snap-on[®]

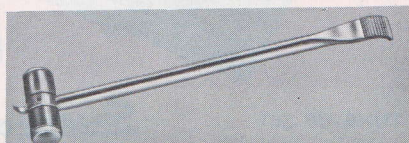
ON THE CAR OR TRUCK

WHEEL BALANCER



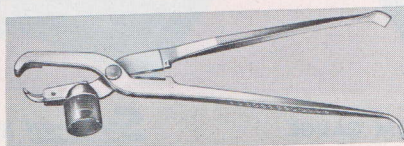
WB-59A Wheel Balancer. Here is a sturdy, dependable wheel balancer for balancing wheels on the car or truck under the conditions in which they are run. It balances the entire rotating assembly of wheel, tire, hub, and brake drum.

This wheel balancer fits all rims from 13" to 22" diameter and enables the operator to predetermine the amount of unbalance and to point out the exact location where the counterbalance weights are to be attached to the rim of any car, bus, or truck wheel assembly. This operation can be done with the least amount of time and with guaranteed accuracy. Turning the end screws extends or retracts the arms equidistant from center to fit various rim sizes and hardened discs on the arms bite easily into the rim to hold the balancer in position. Sliding weight on the chrome plated balance bar shows exact weight required to achieve balance and swing arm shows exact points to apply the weights.



WHEEL WEIGHT TOOL

WWT-12 Wheel Weight Tool. For use with on-the-car balancers on cars with bell-type brake drums and fourteen-inch wheels. The small removable hook at the hammer end is hooked into the weight eye and the hammer used as a fulcrum to provide leverage to remove the weight. Plastic sleeves on the hammer protects white wall tires from scuffs. The curved handle end is used to replace weights on inside of the wheel. End is placed behind the drum and the serrated curve is used as a lever to force the weight into place. The hammer is used to place weights on the outside rim.



WHEEL WEIGHT PLIER

★WWP-11 Wheel Weight Plier. Riveted joint construction, with set of cutters below joint for trimming weights. Plastic hammer tips minimizes changing spring clip tension of weights. Slender curved point of head slips into weight slot—it is replaceable. The heavier hook slips under weight, applies pressure for removal. One handle has offset wedge for removing hub cap, the other has pointed end for removing stones from tread. 11 $\frac{3}{4}$ " long.

★WWP-11-3 Replaceable Hook.

★WWP-11-4 Plastic Hammer Tip.

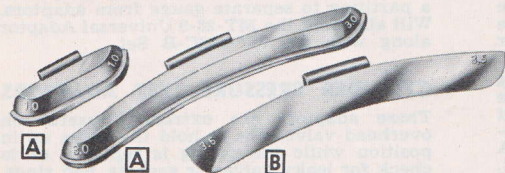


SIDEWALK SIGNS BUILD BUSINESS

Are highly attractive, easy to read attention getters—advertise your wheel services. Identical front and back, made of 20 gauge steel with baked on, mirror-like finish in red, black and white. Each sign is made to fit the SS-218A Ramp Standard. Material and construction is such that these signs will give years of normal service. Easy to keep clean. Their attractiveness, readability, quality and low cost will make them profitable for you.

SS-216B Wheel Balancing Sign (does not include ramp standard).

SS-218A Ramp Standard (does not include sign).



WHEEL WEIGHTS

Designed with short clips which do not interfere with the sealing of tubeless tires yet provide a good solid grip on the rim. Clip edge is beveled slightly for easier application and is securely anchored in the weight. Weights are packed in boxes of 50 up to 3 $\frac{1}{2}$ oz. weight and 25 in larger sizes.

★WW-84 Assortment of 925 weights 13 sizes, 100 each 1/4 oz. to 3 oz., 50 each 3 $\frac{1}{2}$ oz. to 4 $\frac{1}{2}$ oz., 25 each 5 oz. to 6 oz.

Standard Weights				Thick Weights			
Type	Box No.	Weight Size	Qty.	Type	Box No.	Weight Size	Qty.
A	★WW-7025	1/4 oz.	50	B	★WW-8350	3 1/2 oz.	50
A	★WW-7050	1/2 oz.	50	B	★WW-8400	4 oz.	25
A	★WW-7100	1 oz.	50	B	★WW-8450	4 1/2 oz.	25
A	★WW-7150	1 1/2 oz.	50	B	★WW-8500	5 oz.	25
A	★WW-7200	2 oz.	50	B	★WW-8550	5 1/2 oz.	25
A	★WW-7250	2 1/2 oz.	50	B	★WW-8600	6 oz.	25
A	★WW-7300	3 oz.	50				

METAL STORAGE CABINET FOR WHEEL WEIGHTS

KRA-405 Wheel Weight Cabinet. Designed to hold wheel weights from 1/4 ounce to 6 ounces. When you own this metal cabinet you will be able to pick out the exact size weight you need immediately instead of digging through a box of mixed-up sizes. Each of the thirteen compartments is marked to show where each size weight belongs. Dimensions are 49 $\frac{1}{2}$ " high, 12" wide and 7" front to back. It has red enamel finish. May be hung on a wall or stood against the wall and takes up very little space.

HYDRAULIC KING PIN PRESS

Manually operated King Pin Presses are shown and described on page 112.

This hydraulic king pin press provides an easy way to remove stubborn king pins on cars and trucks and is especially useful when working on large trucks because of the wide side arm construction.

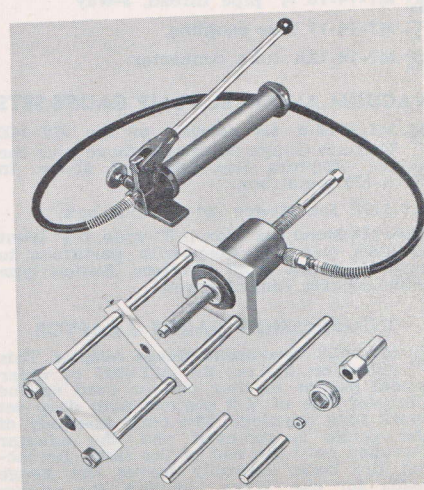
It is available either as a complete set including the Press Set parts listed below, plus the hydraulic pump, ram, hose and coupling set CG-420 shown and described on page 104 and as illustrated here, or the Press Parts only are available as a set for the shop which already has the CG-420 hydraulic unit set.

Here is a press that will apply 20 tons of power, steadily and smoothly, to force out the tightest pin.

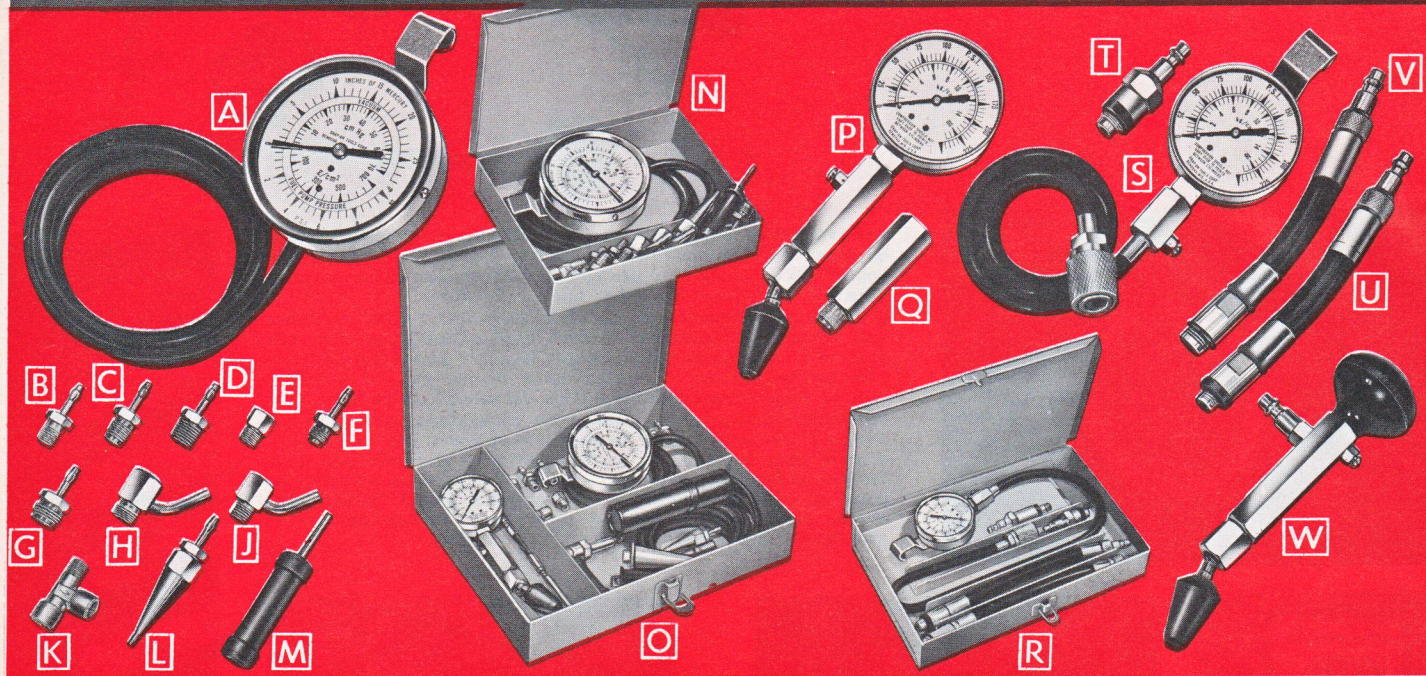
CG-430HY Complete Hydraulic Set, as illustrated.

CG-430 Press Set only. Consists of following parts:

Stock No.	Description
CG-430-1	Short Pressure Screw
CG-430-2	Yoke Adaptor
CG-430-3	Work Head
CG-430-4	Yoke Post (2)
CG-430-5	Post Nuts
CG-430-6	Pilot Guide
CG-430-7	1 $\frac{1}{2}$ " Bushing
CG-230-8	4" Pilot
CG-230-9	6" Pilot
CG-230-10	8" Pilot



Snap-on TOOLS THAT WILL HELP YOU SHORTEN TUNE-UP TIME



Snap-on VACUUM GAUGE

A MT-14E Vacuum and Fuel Pump Gauge. A restriction valve controls and minimizes the indicator vibrations and assures more exact readings. Each gauge comes equipped with four feet of hose. Complete instructions are also included.

Vacuum Scale: Shows up to 28 inches of mercury in one and five inch increments and metric calibrations up to 70 centimeters of hydrargyrum in two and 10 cm increments.

Fuel Pump Pressure Scale: Shows up to 10 p.s.i., in half and one p.s.i. increments and in metric calibrations up to 700 grams per square centimeter in 50 g/cm² increments.

VACUUM GAUGE ADAPTORS

These adaptors are needed to attach the MT-14E Vacuum Gauge hose to various carburetor or fuel pump connections.

- B** MT-12-10 1/8" pipe thread adaptor
- C** MT-12-12 1/2"-20 thread adaptor
- D** MT-14-6 1/4" x 18 pipe thread
- E** MT-14-7 1/8" pipe, 1/16"-24 adaptor
- F** MT-14-13 7/16"-24 thread adaptor
- G** MT-14-14 5/8"-18 thread adaptor
- H** MT-14-8 1/2"-20 thread adaptor
- J** MT-14-9 1/16"-24 thread adaptor
- K** MT-14-10 1/8" pipe thread, 3-way
- L** MT-14-11 hose coupling
- M** MT-14-12A tube connector

VACUUM AND FUEL PUMP GAUGE SETS

N MT-311B-B Set consists of the MT-14E Vacuum Gauge described above plus the eleven adaptors also described above, in KRA-128 metal box.

MT-311B Set. Above set without box.

KRA-128 Metal Box. Box is 8" wide, 6 1/2" front to back and 1 3/8" deep with partitions to separate gauge from adaptors. Button type latch secures hinged cover.

COMPRESSION GAUGE ADAPTOR

Q MT-24D8 Compression Gauge Adaptor. This extension fits on the MT-24H or older model gauges so they can be used on the Chrysler line of V-8 engines with deep set spark plug openings. The cone assembly of the gauge is removed and the adaptor threaded onto the end of the shaft. Replacing the cone assembly leaves the gauge ready for use. When installed, the release valve is 6 3/4" from the cone tip.

Snap-on ENGINE TUNE-UP SET

O MT-318C-B Engine Tune-Up Set. With this set any mechanic can quickly tell "What's" wrong with a motor, and "where" . . . can shorten tune-up time and turn out easy-starting, sweet-running jobs that will satisfy your customers and bring more business. And . . . each tool is a dependable precision instrument—gauges are designed like watches, with bushed bearings and ultra-sensitive spring movements.

The set consists of the following nineteen units: MT-24H Compression Gauge, MT-24D8 Adaptor, MT-14E Vacuum Gauge with eleven adaptors listed to left, MT-50 Timing Light, MT-16 Adaptor Jack, MT-26-13 fourteen mm., and MT-26-14 eighteen mm. Cylinder Pressure Adaptors and the MT-19A Flexible Spark Plug Adaptor, complete in a sturdy KRA-125 metal case. Case has our standard red enamel finish.

MT-318B Same Set as above but without case.

Snap-on COMPRESSION GAUGE

P MT-24H Compression Gauge. Dial registers from zero to 250 p.s.i., in five p.s.i. increments and in metric calibrations from zero to 17 kg./cm² in one half kg./cm² increments . . . holds the highest compression reading exactly until the release valve button is pressed. The gauge may thus be removed from the spark plug hole for easier reading.

A big improvement over previous models is the use of a new check valve. This valve is quite similar to an inner tube valve but does not use an ordinary valve as a replacement as it will cause inaccurate readings. A spare valve is included in the service kit. The 2 1/2" diameter dial is calibrated into 5 pound divisions . . . the cover is easily replaced if damaged. The cone tip is made of neoprene and is not affected by grease or gasoline . . . swivels to reach and fit all spark plug holes. Service kit is included.

MT-24DR Service Kit included with each of the above gauges consists of the following parts. Cone tip, valve and sealing ring in drawstring bag. Note: this kit is for MT-24H compression gauge and previous models.

UNIVERSAL COMPRESSION GAUGE ADAPTOR

W MT-26-9 Universal cone-type Adaptor for use with MT-26-D Compression gauge when taking readings on low compression engines. Has 2-piece hexagon housing with neoprene cone shaped for easy insertion and swivel joint to use on any spark plug hole. Black plastic knob with firm grip enables adaptor to be held firmly in spark plug well. Release valve button releases air after test so needle zeros. Gauge hose is quickly and easily connected to side outlet.

Snap-on COMPRESSION GAUGE SET

R MT-308C-B Compression Gauge Set consisting of MT-26D Compression Gauge, MT-26-11 Adaptor, MT-26-6 Adaptor, and MT-26-12 Adaptor, in KRA-124 Box.

S MT-26D Compression Gauge. This 25" flexible hose type compression gauge and adaptors are a necessity when working on late model cars where there is lack of clearance. The 24" hose is fitted with a quick-coupler for fast connect and disconnect of adaptors, giving you access to almost any engine. Dial registers from 0 to 250 p.s.i. in five lb. divisions and in metric calibrations from 0—17 kg/cm², in one half Kilogram increments. A push button releases all air after test. The gauge comes complete with the MT-26-10, 14 mm. x 1.25 universal adaptor with 8" hose.

T MT-26-6 14 mm. Short Adaptor for Chevy.

MT-26-11 18 mm. Spark Plug Adaptor with 8" flexible hose for use on Ford products with 18 mm. spark plug holes.

MT-26-12 14mm. Adaptor for use on 1959-62 Chevrolet cars and trucks with the large 348 cubic inch engine. Very similar to the MT-26-6 adaptor in appearance.

KRA-124 Metal Box, 6" x 9" x 1 1/4" deep. Has a partition to separate gauge from adaptors. Will also hold the MT-26-9 Universal Adaptor along with the MT-308C-B Set.

CYLINDER PRESSURE TEST ADAPTORS

These adaptors are extremely useful on overhead valve jobs to hold the valve up in position while the spring is replaced or to check for leaky valves or gaskets, bad rings, or cracked blocks. Simply screw the adaptor into the spark plug hole, attach the air hose and inject air pressure into the cylinder to keep the valve seated.

While similar in appearance to our MT-26-10 and MT-26-11 Compression Gauge Adaptors these test adaptors have no check valves and cannot be used with the Compression Gauge. Each adaptor is 7" long, the center position is flexible.

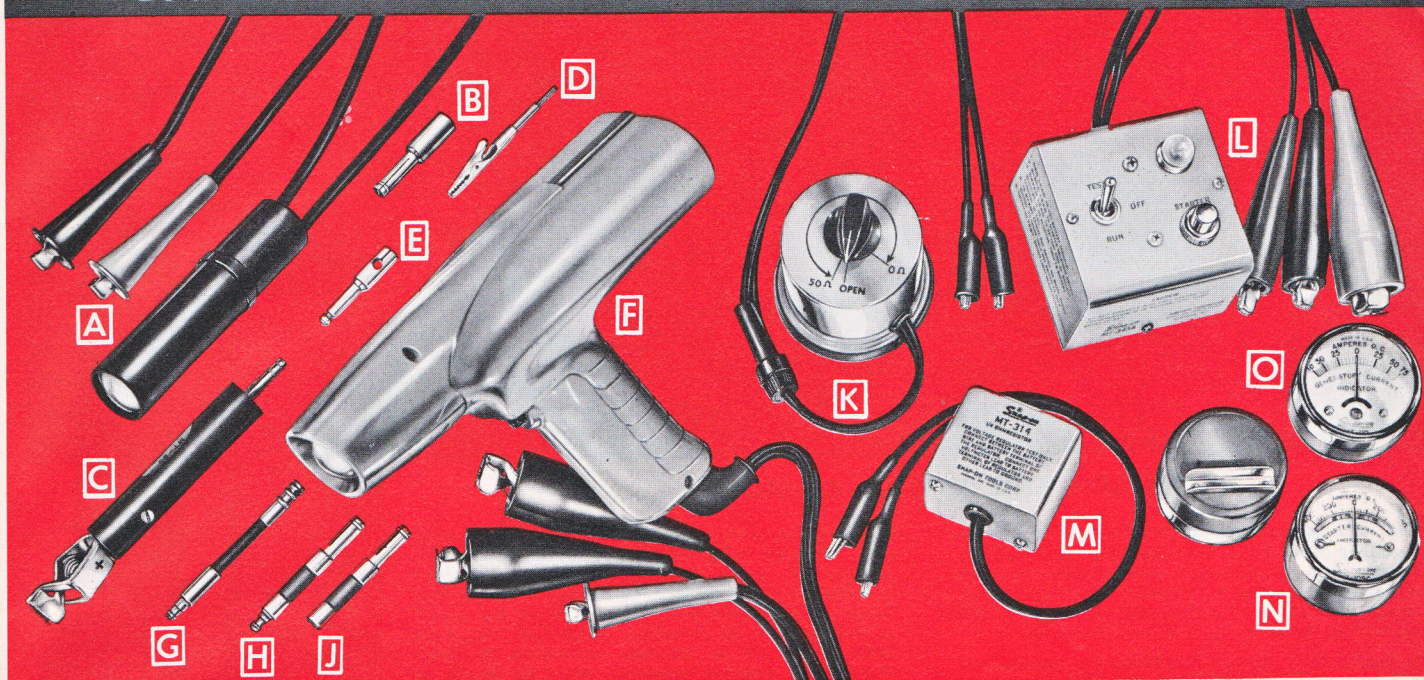
U MT-26-13 14mm. Cylinder Pressure Adaptor

V MT-26-14 18mm. Cylinder Pressure Adaptor

RUBBER GLOVE AIDS TESTING

★GA-196 Rubber Glove Thin, flexible and highly shock resistant. Permits direct contact with secondary voltage leads or terminals without getting a high tension jolt. Lets you remove leads faster than with insulated tongs. Hot manifolds or sharp objects can easily damage the glove, and we recommend you use a cotton glove over the rubber glove.

LOCATE TROUBLES IN A HURRY WITH THESE DEPENDABLE TOOLS



Snap-on TIMING LIGHT

A ★MT-50 Timing Light. May be used on any volt system. Glass enclosed pronged neon tube gives a brighter light than most units and can be replaced quickly and easily. Lens is recessed in the case for greatest protection. The 1¼" diameter by 5¼" long case is made of tough black plastic and has a high heat resistance. The small diameter makes it easy to get down to the timing marks and is especially useful on trucks and cars where timing marks are on the flywheel. Rubber-covered, high tension leads are four feet long and have rubber covered alligator clips. Case unscrews for replacement of parts.

★MT-50-4 Replacement Neon Tube only.

TIMING LIGHT ADAPTOR JACK

B MT-16 Timing Light Adaptor Jack. Many cars have completely shielded ignition leads making it impossible to connect the timing light lead to the spark plug. This brass adaptor slips into the distributor lead opening, and the lead to the other end. Sufficient contact area remains for clipping on the timing light. Overall length 2".

TIMING LIGHT ADAPTOR

C MT-55 Timing Light Adaptor converts any 6 volt power timing light for use on either 6 or 12 volt ignition systems quickly. Places the correct resistance in the circuit for proper functioning of timing light and protects light. Has black fiber, heat and shock resistant case, copper plated alligator clip on one end, solid copper stud-type terminal on the other with two grooves to hold light clips.

SPARK PLUG ADAPTOR

D MT-319 Spark Plug Adaptor. Permits attachment of our MT-215 Timing Light, MT-413 Tachometer, or MT-615A Anal-O-Scope to various foreign cars such as Volkswagen, Karmen Ghia, and Porsche. The adaptor clips onto the spark plug, the plug lead is pressed onto the threaded end and the test instrument is attached to the center.

SPARK PLUG ADAPTOR SET

E MT-80 Set of 8 Adaptors. For use with our Anal-O-Scope or other test equipment. These aluminum units fit between the spark plugs and the high tension leads and provide direct contact for shorting or for connecting instruments. A side hole with friction ball permits placement sideways on the plug when more convenient.

NYLON PLIER-TONGS

GA-159 Tongs. Not shown. Non-conductor, oil, water and grease resistant. Heat resistant to 300° F.

Snap-on POWER TIMING LIGHT

F MT-215 Power Timing Light. Light is equally bright on 6 or 12 volt systems, polarity observation not required. Highly efficient electrical circuit provides high degree of brightness and concentrated light pattern regardless of engine speed. Pistol grip handle is perfectly balanced with firm comfortable grip. Special push-button switch has ample over-travel so operator can select most comfortable position. Leads are extremely flexible and leave at bottom of handle, out of the way of the hands. High impact, glossy red plastic case insulates against shock, will not break or chip if dropped and will not be harmed by grease, gasoline or oil. It will not fade from sunlight or bleach. Parts are easily replaced.

FLEXIBLE SPARK PLUG ADAPTOR

G MT-19A Long enough so that shorting tests can be made (or a timing light clip attached) without altering position of the spark plug insulation boot. The metal female end is shaped to fit snugly over plug. Rubber covered section is very flexible. 4¼" long. MT-198 SET of eight adaptors.

ANAL-O-SCOPE ADAPTORS

Designed to eliminate triggering problems when testing Volkswagen's and other vehicles with our Anal-O-Scope. Such problems may be caused by low cylinder compression, closed spark plug gap, carbonized plugs, or induced voltage.

By introducing a spark gap into the high tension lead, these adaptors overcome such problems. Simply use the adaptor in series with the high tension lead at the distributor or the spark plug. Double or intermittent timing light flashing is also solved with these adaptors.

H ★MT-40 Spark Plug Adaptor. One end fits over the spark plug, the other end accepts the lead. Center portion is insulated and brass ends allow attachment of trigger lead. 3¾" long.

J ★MT-41 Distributor Adaptor. Has center insulated portion. One brass end fits into distributor, the other end receives the high tension spark lead and provides for attachment of trigger lead. 2¾" long.

FIELD RHEOSTAT

K MT-316 Field Rheostat. Small, easy to use with any 6 or 12 volt regulator tester that does not have built-in rheostat. Round, 3" x 2¼" ventilated metal case with cushion ring at bottom edge. Control panel with continuous adjustment from 0 to 50 ohms with separate setting for full open circuit. Has flexible 6 foot lead with alligator clips and boots. Uses an 8 ampere fuse.

Snap-on IGNITION CONTROLLER

L MT-345A Ignition Controller. 6 or 12 volt systems. Starts an engine without ignition keys; permits intermittent or constant turnover of engine from outside of car (without starting if desired); checks for broken circuits or blown fuses; use to bypass switches; use as a direct or intermittent switch; use to test and adjust horns; for finding voltage drop in charging circuit; for grounding out armature. Case is 2 x 3½ x 3½. Starter button controls heavy duty, momentary contact type switch substituting for any switch on the auto. Starter will not crank unless button is pressed—it is spring loaded to prevent accidental operation. The indicating light provides visual means of checking distributor point operation. The switch has "Start", "OFF" and "TEST" positions. "START" is same as ignition switch on car. "OFF" is used for cranking operation without starting the car. "TEST" is used in examining the opening and closing sequence of distributor points, checking continuity, using light as indicator, checking operation of any switch, etc. Has three flexible 6-foot leads, and color coded heavy duty clamps. Automatic circuit breaker protects controller.

★ CT-4-5 Replacement Indicator Bulb.

¼ OHM RESISTOR

M MT-314 ¼ Ohm Resistor for use with our MT-401A Generator Regulator Tester. Used to simulate a fully charged battery during the regulator test. Red enamel case, 2¼" x 2½" x 1½" with 2 highly flexible 15" leads for ample "reach" for quick installation. Alligator clips have insulated boots.

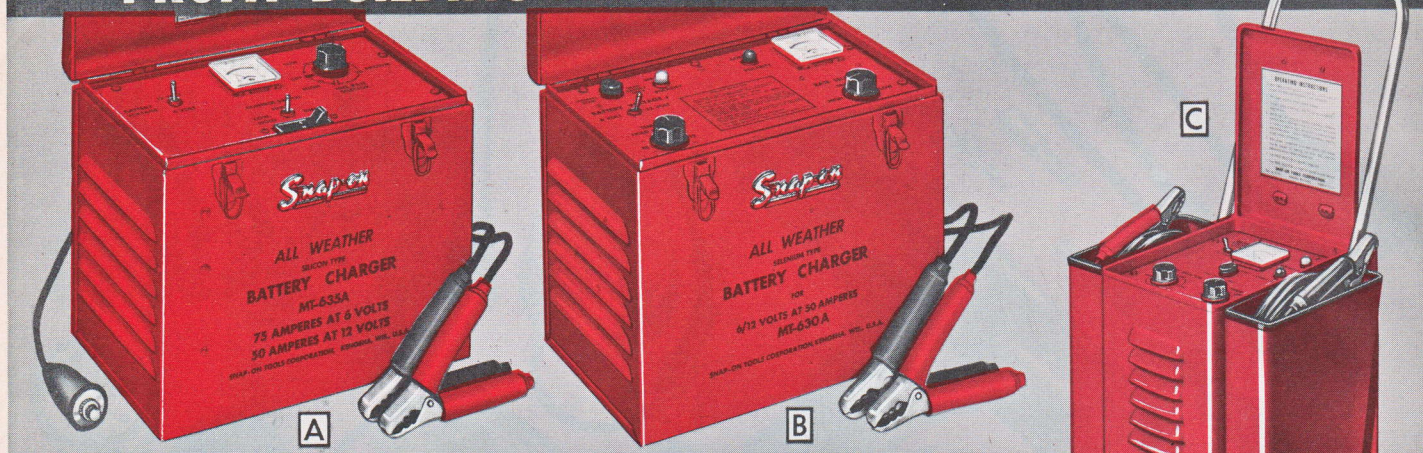
STARTER CURRENT INDICATOR

N MT-109C Starter Current Indicator. Checks the amperage draw of the starter motor. Too high a reading indicates worn bearings, grounded fields or armature coils. A low reading with a sluggish motor means excessive starter circuit resistance. Place the metal channel of the gauge over the starter cable and depress the starter switch... gauge will show the amperage. Dial has 25 amp markings from 0—400 in 2 directions to operate regardless of the cable polarity. It also has green "O.K." and red "HIGH" ranges for fast checking.

GENERATOR CURRENT INDICATOR

O MT-110 Generator Current Indicator. Shows if generator is delivering current under load without disrupting wires or parts. Dial is calibrated from 0 to 75 amps, on both sides of zero, in 5 amp. increments permitting reading regardless of current flow direction. In use, metal channel on rear of case is placed over generator output wire and reading observed.

PROFIT BUILDING BATTERY SERVICE EQUIPMENT



SILICON TYPE BATTERY CHARGER

A MT-635 Silicon Type Battery Charger is a high quality unit built with Silicon Rectifiers to provide, long, trouble-free service. Can be used for fast charge or slow overnight charge for any 6 or 12 volt battery; it provides 75 amperes for both 6 volt batteries and 12 volt batteries.

The heavy duty Silicon Rectifiers are guaranteed for 5 full years and provide full charging rates almost indefinitely. Rest of unit is guaranteed for one year. Charger is protected from overheating by automatic thermobreaker and from excessive current by a magnetic circuit breaker. Has permanently silicon lubricated cooling fan. Push button is used to bypass the high speed breaker when using charger to start a car.

Automatic Time Control shuts off after predetermined charging program using signal bell

to warn operator. Case is 13 $\frac{5}{8}$ " long, 8 $\frac{1}{2}$ " wide and 12" high with hinged cover to completely protect all parts. Control panel has: Battery Voltage Control Switch to select 6 or 12 volt battery; Ammeter with scale of 0 to 100 amps. in increments of 5 amps. Scale has red zone from 85 to 100 to indicate excessive charging. Time Rate Selector controls rate and length of charge.

Tapered charging cycle proceeds as follows—a high charge for 10 minutes, a complete cut off for 1 minute to cool, degas and depolarize, a medium charge for 30 minutes, another 1 minute cut-off, a low charge for 15 minutes and then final cut-off. The Control Switch has "Low-Hold," "Hold" and "Timer" positions. Heavy duty, 8 feet leads and clamps—will not crack in cold weather.

SELENIUM-TYPE BATTERY CHARGERS

B MT-630A Battery Charger. Has the same charging features as the MT-631A Chagemobile except that the power cord is 12 feet long and the heavy duty leads are 9 feet long. Case is 13 $\frac{5}{8}$ " x 8 $\frac{1}{2}$ " x 12" high.

C MT-631A Chagemobile. Has a heavy-duty Selenium Rectifier that provides long, trouble-free service. Can be used for fast charging or slow, overnight charge for any battery. It is conservatively rated to deliver 50 amp. continuous charging for 6 and 12 volt batteries. Operates on 115-volt, 60-cycle A.C.

Versatile: Can be used as a car starter or a battery charger on alternator as well as generator-equipped cars. A built-in polarity protector prevents alternator damage. A green light indicates correct connections. A red light indicates wrong connections. This device will not permit charging unless correct polarity is present in hook-up. A dead battery will not permit the sensing device to determine polarity—so for charging a dead battery or starting a car having a dead battery a manual solenoid control is provided to by-pass the device.

Completely Enclosed: In a compact convenient, baked-enamel metal cabinet. A hinged cover protects the control panel against weather.

Timer: Provides manual or automatic control. Can be set for any period up to 60 minutes with automatic shut-off and signal bell. Will charge indefinitely at charging rate selected when set in "Hold" position.

Charge Rate Selector: Provides four positions, "Trickle" for slow charge, "Low" or "Medium" for sulfated batteries and "High" for quick charging.

Voltage Switch: Sets charge for either 6 or 12 volt battery charging.

Ammeter: Scale ranges from 0-75 amperes in five ampere increments. It has a red zone from 50 to 75 amperes to indicate an excessive amount of charging and should not be operated at this rate for more than five minutes at a time.

Cooling Fan: Is Silicon lubricated and protects rectifier and transformer from overheating.

Clamps and Leads: Clamps are heavy duty with replaceable copper inserts for positive contact. The 3-conductor power cord is 30 feet long. Heavy duty leads are 20 feet long, the insulation material will not crack in cold weather and is easy to handle.

Mobility: Two 8" rubber-tired wheels permit easy movement and two metal feet at the front allow the charger to stand level for use.

Case: Measures 22 $\frac{1}{4}$ " high, 8 $\frac{1}{2}$ " wide, and 10 $\frac{1}{2}$ " front to back. Two side pockets for leads are 21 $\frac{1}{2}$ " deep with 3" x 9" top opening. Rear pocket is 17 $\frac{1}{2}$ " deep with 3" x 7 $\frac{1}{2}$ " open top. Perforated bottoms of pockets prevent accumulation of rain water. Narrow design, long cord and leads plus mobility make this an excellent charger for use in used car lots. Complete operating instructions are provided.



BATTERY AND CHARGER CART

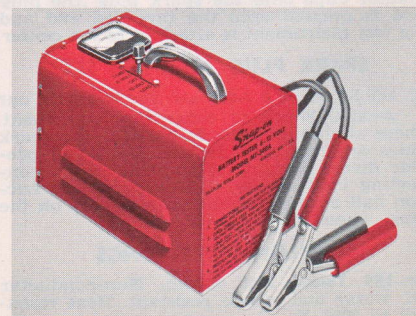
KRA-440 Battery and Charger Cart. Brings the charger to the car, indoors or out. The shelf at the bottom holds the battery during charge. Made of heavy steel tubing. Finished in red enamel. Solid rubber tired wheels assure easy rolling. Feet on lower shelf provide rigid support. Frame has hooks for coiling up lead wires.

AUTOMATIC 6 AND 12 VOLT BATTERY TESTER

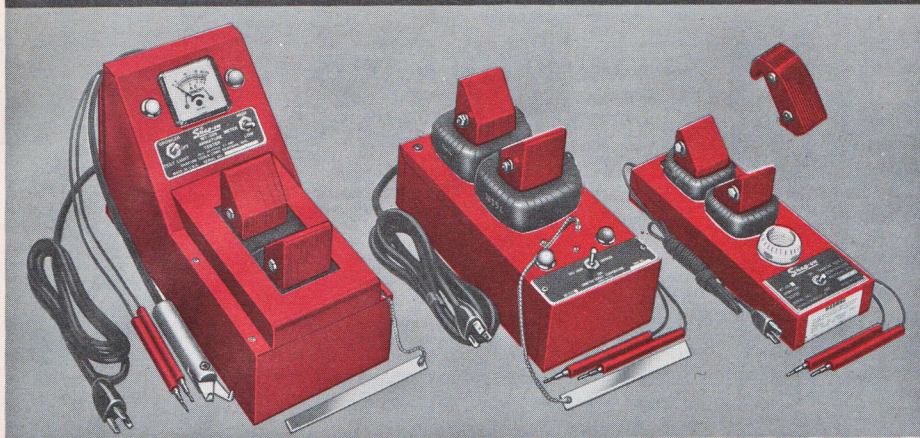
MT-340A Battery Tester. Shows capacity and condition of the battery without disturbing or puncturing the insulation.

Performs three important tests: 1. Open Circuit Test shows battery condition and no-load voltage; 2. Load Test shows if battery can deliver sufficient power for 30 seconds which is measure of capacity; 3. Regulator Test performed with engine running shows operation of regulator.

Five-position heavy-duty breaker type switch will stay in the "6 volt," "off" and "12 volt" positions, but has to be held in the respective "load" positions. This prevents accidental overloading. Red pilot light glows when tester is in open circuit. 43" lead wires are color-coded, have insulated handle terminal clips.



Snap-on ARMATURE GROWLERS ARE HIGH QUALITY



A DELUXE-TYPE GROWLER

A MT-326 Armature Growler. 117 volt 60 cy., AC. Raised panel at rear places meter in easier-to-read position. Keeps switches handy. Pole pieces are at front. Armature, with or without fan assembly can be placed on pole pieces. Two heavy duty toggle switches, easy-to-read 2-scale meter and red and green pilot lights are all conveniently grouped.

Switch at left provides 3 positions: Growler, Off and Test Light. Growler position is used in conjunction with growler tests including the use of hand piece. Does not overheat even if switch is left on without armature in pole shoes.

Switch at right selects amperage range. This is a two position switch, "High" actuating the high scale of the meter for testing large armatures, and "Low" for small armatures. The two-scale meter is calibrated from 0 to 5 amps. for testing small armatures, and 0 to 25 amps. for large armatures. Balanced needle movement may be zeroed by means of screw in plastic cover.

The red pilot operates when either Growler or Test Light switch is on—acts as warning, prevents needless waste of current. Green

test light used in conjunction with continuity testing, operates when continuity or a closed circuit exists. Test Prods have insulated handles, operate at mere 24 volts, eliminate shock hazard and have "fixed" rather than "spring-loaded" points.

Steel Blade furnished is used for short circuit tests, and the adjustable Hand Piece is used with meter in making bar-to-bar current tests. Points on hand piece can be spread for multiple bar testing. Finished in red baked-on enamel. Case has compartment to store test prods, hand piece and blade.

MT-326-220 Growler. Same as above but 220 volt 60 cy. AC.

EACH GROWLER HAS THIS FEATURE

All Growlers listed have two individual coils in one magnetic circuit. Each coil consists of two isolated windings, one of which is for test prods and test light. This isolation is important since it removes test prods from the 117 V. circuit to eliminate shock hazard. The two dual coils provide a more efficient magnetic field for unit to be tested.

HIGH QUALITY GROWLER

B MT-323 Armature Growler. Modestly priced, this growler provides many features which make this a highly desirable unit. The rugged construction will provide long, trouble-free service. Coils, laminations and transformer of this Growler are designed for heavy duty operation. Low voltage test leads. 3-pronged plug and grounded case provide high safety factor for the operator. An indicating light is provided for continuity tests. Pilot light shows when unit is "on". A test blade is also included, and is chained to the housing. Controls are provided by the three-way switch. The case has a red, baked-on enamel finish, and is equipped with rubber feet. Operates on 117 Volt, 60 cycle A.C. single phase.

MT-323-220 Growler. Same as above but for 220 Volt, 60 cycle A.C.

LOW COST GROWLER

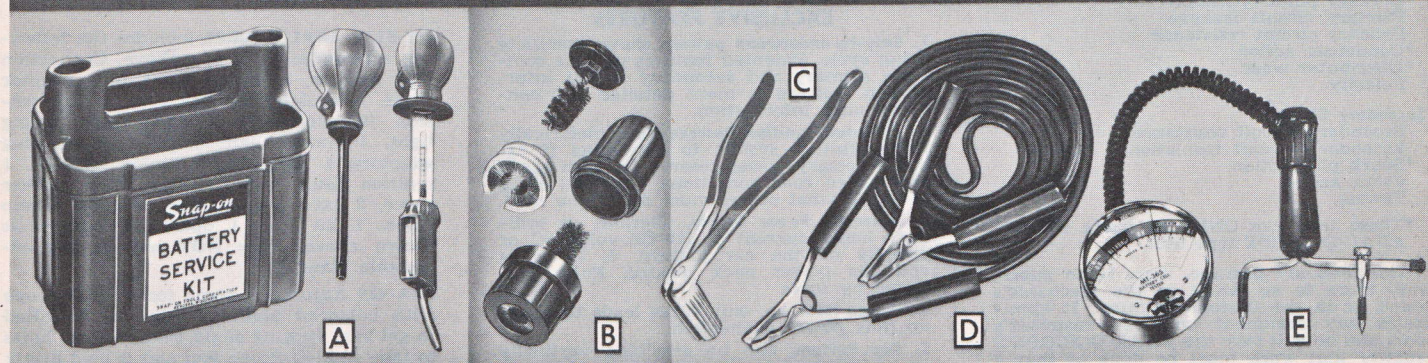
C MT-320A Armature Growler. Excellent for checking, short circuits, open circuits and grounds in armature winding or when reconditioning motors and generators. For 117 V. 60 cy. A.C. A compact unit with prods, test lamp socket and switch, all mounted on a metal base. Well built but of simpler construction than the MT-323 listed above. All you need to do is screw a light bulb in the socket and you are ready to test. The heavy-duty "On-Off" switch controls the coils, probes and lamp. Probes and lamp are independently wired and only work when switch is "On". Equipped with the same double coils as used in the other Growlers and as described at left. The Growler can be used for testing virtually all armatures.

ARMATURE GROWLER ADAPTOR

D MT-329 Armature Growler Adaptor. For testing small armatures such as on electric drills, heaters, etc. Adaptor is hooked over the pole piece on standard growler thus making the bridge smaller. 11 sets of laminations are separated by insulated bakelite washer. Ventilated construction. 3 3/4" long, 2 1/4" wide.

Refer to page 93 for Armature Reconditioning Tools.

THESE BATTERY SERVICE TOOLS HELP BRING MORE PROFIT



A BB-30-Battery Service Kit. The red plastic case is virtually indestructible. It withstands extreme temperatures, knocks, falls, and is impervious to common acids. Its one piece, seamless construction cannot separate or split. Non-slip, ribbed bottom will not mar car finish.

Hydrometer-Thermometer and Filler Bulb are housed in end wells through which over a gallon of water can be poured into bottom compartment. Two trays provide tool storage. The Hydrometer-Thermometer has float gauge printed in three colors with "Re-charge," "Fair" and "Good" markings to indicate exact battery condition. Range of 1,060 to 1,320 covers all test conditions. Recessed thermometer with range of 0 to 160 degrees shows temperature and Specific Gravity corrections. Six ounce capacity red rubber filler bulb has straight stem and is 10 1/2" overall.

BB-4A Replacement Hydrometer-Thermometer
BB-6 Replacement Filler Bulb with stem

B BTC-2 Battery Terminal Brush has replaceable brush inserts and break-resistant black plastic case that is highly resistant to battery acids. Two brushes are provided, one female for cleaning terminals, the other is male for cleaning clamps. Brushes are of stiff wire so spaced to clean quickly.

BTC-2-1 Brush Kit easily installed.

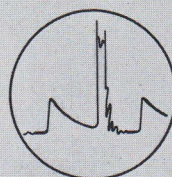
C GA-118A Battery Terminal Spreader with 1 1/2" offset serrated to spread and clean terminal clamps in one operation without distorting the clamp. Handles give firm grip.

D MT-310 Battery Booster Cable Set. Allows battery of service truck to be used to start engine. Cables are 10 feet long of #6 gauge copper wire. Copper plated, heavy duty terminal clip with color-coded insulated plastic handles is mounted on each end of both cables, red for positive, green for negative. Two cables in set.

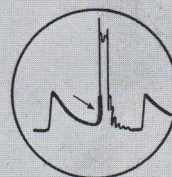
E MT-365 Battery Cell Tester designed for highly accurate tests such as the Delco-Remy light load cell test, standard load test, open circuit test and regulator tests. Ruggedly constructed for long life. Meter is sealed in chrome plated case, meter face protected by glass impervious to all garage solvents. Compactly coiled, oil and grease resistant neoprene covered probe cord extends to 4 feet and retracts to 10". Large 3 1/2" diameter face has each segment color coded (red and green). The entire meter range from 1.58 volts to 3.02 volts is calibrated in increments of 1/100 volts, with division marks at 1/100 volt increments. Simplified instructions are printed on the meter face for added convenience. Color coded probes are adjustable from 2 1/2" to 4 1/4" which is ample for various battery cell spacings. Large, wood probe handle provides firm grip with rubber cap on end acting as cushion to your hand.

Snap-on ANAL-O-SCOPE®

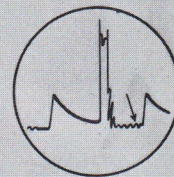
THE PATTERN TELLS THE STORY



This is a normal pattern as it appears on the tube. Variations indicate troubles.



This pattern indicates that the contact points are not breaking cleanly.



This pattern variation shows there is resistance in the primary circuit.

DISTINCT VARIATIONS POINT OUT OTHER TROUBLES

YOU GET ACCURATE, MORE POSITIVE TESTS, GREATER CUSTOMER SATISFACTION AND INCREASED BUSINESS WITH THE ANAL-O-SCOPE®



KRA-425 Adjustable Stand is not furnished with the MT-615B Anal-O-Scope. It may be ordered separately.

The SNAP-ON ANAL-O-SCOPE is an instrument using an entirely new method for testing engine ignition systems. With this instrument, it is no longer necessary to check various components of an ignition system. Not only is this a time-consuming operation, but minor faults of one component part can affect related parts, which would affect the operation of the engine. The ANAL-O-SCOPE combines the complete ignition system into one test pattern, on a 5" cathode ray tube, and by comparison, easily pin-points the exact defect involved.

ALL THESE TESTS can be made at one time and with the same basic hook-up:

Primary Circuit:

- *Ignition reserve (Primary and Secondary)
- *Cam angle (of each lobe)
- *Breaker point operation
- Primary circuit leakage
- Primary circuit resistance
- *Condenser action
- *Distributor wear
- Polarity

Secondary Circuit:

- Secondary circuit resistance
- Secondary circuit insulation
- *Spark plug action
- Valve action
- Timing

*These tests can ONLY be made with an ANAL-O-SCOPE type unit.

These tests are positive, there is no guessing, there is no doubt in the mechanic's mind or in the customer's mind. It eliminates any argument on your customer's part and he will take the ANAL-O-SCOPE'S answer that work must be done or that a new part is needed. In addition to these tests the ANAL-O-SCOPE, by means of elimination will detect compression and carburetion faults.

WHO CAN USE IT? Since the ANAL-O-SCOPE is a universal instrument and can be used on all types of engines it is used to advantage in all repair shops that service engines with battery or magneto ignition systems. It is especially useful and profitable in automotive shops, garages, service stations, fleet shops. Air craft engines, marine engines as well as industrial equipment and farm machinery engines can all be made to operate better when corrected according to ANAL-O-SCOPE tests.

SAVES TIME. One of the outstanding features of the ANAL-O-SCOPE is that more complete tests can be made in less time than by any other method. The engine need not be disassembled—all that is required is that four clip-on connections be made. The tests

are made and the trouble pin-pointed fast and accurately. Parts which appear to be in good condition when tested separately are frequently proved to be functioning improperly in actual operation, even parts on brand new engines. You save time by "seeing" exactly where the trouble is.

GREATER ACCURACY. Since the ANAL-O-SCOPE is an electronic instrument it is inherently more sensitive and accurate than any other type of equipment. Thus the readings and results are true and direct, they are not "averages." Nothing can do a better job, give you more accurate results!

GREATER PROFITS. Since you save time on each job you can handle more work in the same time. Thus you make more money, greater profits. Besides this, your customers more readily accept your recommendations. You will be amazed how your part sales will increase! You have fewer "come-backs," produce better work. The ANAL-O-SCOPE builds customer confidence and its appearance alone is the most impressive piece of garage equipment you have ever seen.

EXCLUSIVE FEATURES

1. **Easy-to-understand pattern** shows complete firing cycle. Patented features provide complete primary and secondary circuit information. Pattern is more detailed and contains more information.
2. **Patented Ignition Reserve Test**, electrically loads ignition system to determine if car has necessary power reserve for high speed and varied road conditions. Lets you do in the shop what others must do on the road.
3. **Universal Power Supply**, operates on ordinary house current of 110-120 volts AC or directly off the car battery, 6, 12 or 24 volt. No power pack needed. Fully protected by fuses.
4. **Simple Hook-up**, only three leads to hook-up plus power connection.
5. **Big Pattern**, can be amplified vertically or horizontally to show any part of a cylinder or all cylinders at one time.
6. **Nothing Else to Buy**—a most important feature. There are no hidden "extras" as with other equipment. Everything you need is furnished as a complete package ready to go to work. For the complete set see the listing below and illustration in next column.
7. **Completely Portable**, another plus feature, you can use it in the shop or out on the road since it works on battery systems with its built-in power pack.
8. **Easy to Understand.** The ANAL-O-SCOPE presents a trace pattern on the "picture tube." Deviations from the normal pattern indicate exactly where and what is the nature of the trouble. All such possible deviations are diagrammed in the instruction book which explains use of the instrument.
9. **Detachable Leads**, in case of damage to the leads it is not necessary to rewire inside the instrument. Individual leads are easily replaced in the four-prong jack.



MT-615B ANAL-O-SCOPE includes the following accessories as shown above. Connection lead harness, 8 flexible spark plug adaptor jacks, 1 insulated jumper wire, 1 high tension jumper cable, 1 power-type timing light, 1 timing light jack, 4 spark plug adaptors, 1 gapped distributor adaptor, 1 ignition fault finder, 1 insulating rubber glove, 2 extra 1-amp fuses, 2 extra 8-amp fuses, 1 kit bag, 1 operating manual as shown above. Does NOT include the adjustable stand.

KRA-425 Adjustable stand for Anal-O-Scope with balanced platform that can be tilted to get best viewing angle. Platform has holes to take Anal-O-Scope feet and is held firmly by 2 wing nuts. Legs made of steel tubing with rubber feet to prevent marring. Size: 16 3/4" x 11 1/16" x 16 3/4".

ANAL-O-SCOPE GLARE SHIELD



MT-625 Glare Shield keeps light from Anal-O-Scope screen and provides greater visibility of trace pattern. Extremely useful outside shop in daylight. 6" in diameter with tapered opening which can be rotated to provide maximum glare protection. Rubber rings around edges protect

Anal-O-Scope and operator. Finished in dull black, inside and out.

Snap-on[®] MASTER ANALYZER

A MODERN TESTING CENTER THAT
CAN BE YOUR BIG MONEY MAKER

THE HEART OF THE MASTER ANALYZER IS THE Snap-on ANAL-O-SCOPE

The Master Analyzer is a complete tune-up center. Here in one compact, mobile unit is everything you need for engine and ignition analysis—including the famous SNAP-ON Anal-O-Scope and four basic test instruments. This fine piece of equipment will not only impress your customers with your service facilities, but will enable you to perform top-quality tune-ups that will keep them satisfied with your service and recommend your shop to others . . . it is the modern method of diagnosing engine performance faster and more accurately, lets you get more productive time out of each service hour, and permits you to show your customer on the 'scope and meters what the trouble is and, afterwards, that it has been properly corrected.

Instruments are set into the console in such a manner that permits them to be removed quite readily for individual use if desired . . . in the shop or on the road. The console is constructed of strong cast aluminum with three sheet steel compartments that accommodate the meter leads. Steel compartment covers are hinged and fitted with magnetic latch fasteners and plated handles.

MT-4055 Master Analyzer. The tune-up center complete as illustrated. Includes the following units:

MT-650 Console. This unit may be purchased separately if you own the Anal-O-Scope and meters and wish to consolidate them into a complete analyzer.

MT-615B Anal-O-Scope. Complete with accessories as shown and described on the opposite page.

MT-402A Alternator—Generator—Regulator Tester. Tests all 6 or 12 volt generating systems on cars or trucks equipped with alternators or DC generators. See full description on page 130.

MT-415B Combination Tach-Dwell Meter. Combines a tachometer and cam-angle or dwell meter in one compact instrument. Designed for use on 6, 12, or 24 volt systems. Completely described on page 130.

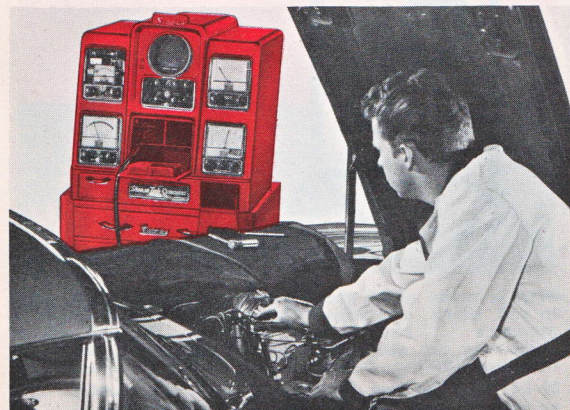
MT-425 Vacuum and Fuel Pump Pressure Gauge. Complete with hook-up adaptors. Detects a wide range of engine trouble from leaky manifolds to weak springs. Shown and described on page 131.

MT-430 Ignition Analyzer. Tests primary and secondary coil efficiency, coil heat, stalled motor coil current, capacitor efficiency, capacitor leakage, coil polarity, ignition efficiency, and many other operating factors. See full description on page 130.

KRA-315B Roll Cab. Specially designed for use with the Master Analyzer Console. It provides ample storage space in the drawer and lower compartment for many other tools—puts everything right where you need it. Top of the cabinet is 26½" x 19" and stands 34¾" from the floor. Doors have pockets for booklets, etc., and one tumbler lock secures doors and drawer. Described on page 8.

NOTE: Any instrument on pages 130 and 131 will fit into the Console and can be supplied if preferred.

★**MTC-6 Vinyl-Coated Fabric Cover** for Master Analyzer. Has clear vinyl front. Protects yet displays the equipment. Not included with the Analyzer—order separately.



Read what one of America's largest dealers says about SNAP-ON Tune-up Equipment

"We investigated the operation of several other makes of tune-up equipment before purchasing your Snap-on Master Analyzer, Distribuscope and a separate portable Anal-O-Scope that was installed in our customer reception area.

"As we are currently repairing some 250 cars per day, this equipment has saved us a considerable amount of time. Along with the saving of time, and making our stall space more productive, we have enjoyed a 22% increase in tune-up labor volume, and a corresponding increase in the replacement of component parts of the ignition and carburetor system.

"Another important factor we have noticed since making the Anal-O-Scope ignition load test a part of every tune-up is that we have virtually eliminated comebacks and customer complaints.

"We feel certain the continued use of your equipment will result in even greater profits and customer satisfaction." Signed; Director of Service. Name furnished on request.

Snap-on

DISTRIB-U-SCOPE®

GIVES EVERYTHING
YOU NEED WHEN
TESTING DISTRIBUTORS

NOTHING BLOCKS YOUR VIEW



This SNAP-ON Distrib-U-Scope gives you everything you need in a distributor testing machine—quick checkout, pinpoint accuracy, easy distributor servicing and parts replacement. Nothing can touch it on single-point, dual points or high rpm checks. With this machine you can put distributor servicing on a really profitable basis, and give your customers results that are second to none.

MT-605 SNAP-ON Distrib-U-Scope complete as illustrated. Rugged built console-type housing is cast aluminum with durable baked-on red enamel finish.

WHAT THE DISTRIB-U-SCOPE DOES

- Checks contact point cam angle or dwell for each cam lobe.
- Shows wear in cam, distributor shaft, bushing, breaker plate and housing.
- Checks centrifugal and vacuum advance against factory specs.
- Shows contact point bounce, point creeping.

LOOK AT THESE EXCLUSIVE ADVANTAGES

NO OBSTRUCTION. Distributor is mounted off to side where it is out of way. This leaves scale on machine unobstructed and easy to read; operator can see entire scale. All lobes can be seen functioning at once allowing accurate comparison.

DOUBLE LIGHT SYSTEM. Consists of red and blue lights each giving exact dwell period or cam angle for each lobe of the cam. Operate at 180° to each other.

TWO-SCALE AUTOMATIC TACHOMETER. Automatically changes from low scale to high scale. Low scale, 0 to 1000 RPM in increments of 25, high scale from 0 to 4000 RPM in increments of 100. Both scales calibrated in distributor's RPM.

SIGNAL LIGHTS. Two lights, one red, one green, mounted below tachometer show which scale is in operation.

LOW VOLTAGE TEST LEADS. Carry only 24 volt, DC current so there is no danger of harmful shock.

TRANSPARENT SCALE. Allows operator to see dwell through the scale. This method is more accurate, easier and faster and allows individual lobe section to be seen.

HANDLES DUAL-POINT DISTRIBUTORS. Patented light system makes possible visual viewing of both sets of points and shows dwell for each set, the overlap and total dwell. Makes it easy to set up dual point distributors.

ADDITIONAL ADVANTAGES

NEAT APPEARANCE. Housed in streamlined die-cast aluminum case, light weight.

RUGGED VACUUM PUMP. Rated for continuous duty. Meter has range from 0 to 26 inches of mercury.

LEADS COLOR CODED. Red lead actuates red light on scale, black lead controls blue light.

CONVENIENT ROLL CHART. Mounted on top of unit chart gives all automotive manufacturer's specifications from 1955 through 1960. New charts available each year.

EASY HOOK UP. Improved vise assembly facilitates easy hook-up for all distributors because it is self aligning.

VACUUM HOLD. Allows vacuum advance diaphragm to be checked for vacuum leaks.

UNIVERSAL. Accommodates all automotive and light truck distributors.

POSITIVE SPEED CONTROL. Variable speed transformer controls speed for greater accuracy.

UNIT TYPE CONSTRUCTION. All components are made as separate assemblies and are separately fused to give individual protection to each component.

NO INTERFERENCE. Light sources do not cause radio interference.

Check these points, and check the Distrib-U-Scope with any other machine and you will see that it is the finest machine of its kind.



PRACTICAL COMBINATION

The MT-605 Distrib-U-Scope on KRA-315B Roll-Cab is a handy and practical set-up.

KRA-315B Roll-Cab made specially for Distrib-U-Scope and other electrical equipment. Heavy gauge metal, four swivel casters. 26 $\frac{3}{4}$ " long, 19 $\frac{1}{4}$ " wide, 34 $\frac{3}{4}$ " high. Drawer is 18 $\frac{1}{4}$ " x 21 $\frac{1}{2}$ " x 4 $\frac{1}{8}$ " deep. Upper shelf 11" high, lower is 13 $\frac{1}{4}$ ". Two metal doors with tumbler lock that also locks drawer.

SPECIAL ADAPTORS

MT-309 Adaptor Kit. For "Diving Helmet" type distributors on 1932-46 Ford V-8; 2nd series front mounted, flat type 6 and V-8 distributors; and 2-piece type Holley.

MT-317 Adaptor. For Corvair and Int. Harvester V-8 truck distributors. (One included with MT-605).

MT-333 Adaptor. For Delco-Remy distributors having $\frac{3}{16}$ "—24 thread fittings.

MT-334 Adaptor. Protects nylon gear on Valiant, Dart, Lancer, and the 6 cylinder Chrysler products. (One included with MT-605).

DISTRIB-U-SCOPE COVER

★MTC-5 Vinyl-Coated Fabric Cover. Has clear vinyl plastic front. Cover not affected by gas, grease, oil, etc. Protects your valuable equipment.



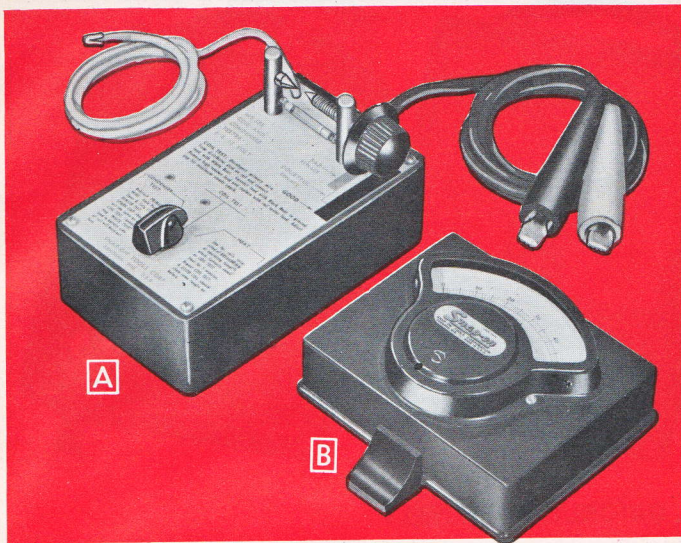
THIS SIGN
BUILDS
EXTRA PROFITS
for YOU

PUT
IT TO WORK
NOW

Sign is made of 20 gauge steel—printed on both sides in red, black, and white. Has baked-on finish for permanence . . . easy to wipe clean too. Stand it where customers can see it and it will help build profitable business. (Sign and stand must be ordered separately).

SS-237 Tune-Up Sign (does not include the stand).

SS-218A Ramp Stand (does not include the sign).



COIL AND CONDENSER TESTER

A MT-335 Coil and Condenser Tester. Operates on the car's electrical system of 6, 12 or 24 volts. It is completely portable and can be used in the shop or out on service calls. Tests condensers and magnets without removing them from the engine, tests coils right on the car, without the engine running, without using the distributor and without disassembly. Also evaluates efficiency of coil by means of calibrated spark gap read on three color-coded zones which indicate overall efficiency of coil: red, replace; yellow, doubtful, replace; and green indicating good coil. Neon indicating light glows during coil tests to warn operator that electrodes are "hot". Three position selection switch permits easy selection of the tests to be performed; condenser test, coil tests or heat test. Unit has a 6 ampere fuse to protect electrical system if leads are improperly connected. Housed in durable black bakelite case $6\frac{1}{4}'' \times 3\frac{3}{4}'' \times 2''$. Connecting leads are $3\frac{1}{2}''$ long with alligator clips and boot protectors. High tension lead is also $3\frac{1}{2}''$ long and it is insulated for 20,000 volts. Complete instructions are included.

MAGNETOMETER

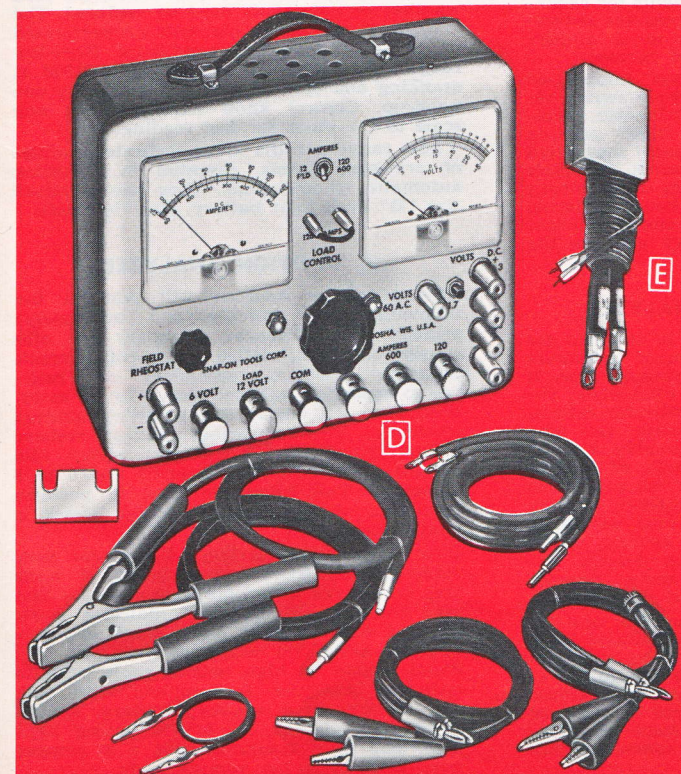
B MT-435 Magnetometer. For use in comparing the strength of one permanent magnet with that of another on motors with magneto ignition systems such as lawn mowers, outboard motors (especially on twin motors which fire in opposition) motorcycle engines, etc. Large easy to read scale provides quick comparison of readings before and after charging the magnet. Calibrated by number of pounds magnet will lift through an air gap of .005" which is air gap between armature and pole pieces of magneto, this scale is from 0 to 50. The balanced needle is easily zeroed. Steel shoe at bottom is ground to provide tight fit and will handle various shaped magnets. Highly accurate readings are made. Has concave surface for rotors and a flat edge for horseshoe magnets. Housed in shock-proof black bakelite case, $5\frac{1}{4}'' \times 5'' \times 2\frac{1}{2}''$.



EXHAUST GAS ANALYZER

C MT-505 Exhaust Gas Analyzer consisting of: indicating instrument with one meter; one tail pipe assembly; two nine foot hoses; one 24 inch hose; one hose coupler and instruction book. Has only 3 control knobs to regulate meter. Sturdy metal case is $8\frac{1}{2}'' \times 10\frac{1}{2}'' \times 5''$. Grey enameled finish.

This Exhaust Gas Analyzer is used to check the air-fuel ratio for economical engine operation and is necessary for the proper setting of the carburetor. It may be used on either gasoline engines or on liquid petroleum engines. There is a different scale for each, the gasoline scale is calibrated from 9 to 15 while the liquid petroleum scale is calibrated from 9 to 16. The Analyzer may be used in the shop or on the road in actual operation tests. It is powered by two number 6 dry cell batteries (not furnished). Meter face is easy to read and has two scales as mentioned above and color coded. Red indicates a rich mixture, green for normal mixture and yellow for a lean mixture. A "set" and "balance" position are clearly marked on both scales. An accurately balanced needle movement provides long, trouble-free service. The dial needle can be adjusted by a small screw in the plastic meter face cover.



HEAVY DUTY A.V.R. TESTER

D MT-540B Heavy Duty "A.V.R." Tester. Combines a precision ammeter, a precision volt meter, and a heavy duty carbon pile all in one compact unit. Makes rapid, accurate tests on batteries, starters, generators, alternators, and regulators on all passenger cars, trucks, busses and tractors. The instrument is portable and can be used in the shop or out on the call.

While the most frequent use of this tester will doubtless be on generating and regulating equipment and to check battery life and condition, tests involving starting operation, ignition circuit and lighting circuit efficiency, relays, signal devices, and other controls can also be readily made.

The ammeter has a D'Arsonval movement and is calibrated 1.2-0-12, 12-0-120, and 60-0-600 in .01, 1 and 10 amperage divisions respectively. A toggle switch selector for the 12 ampere scale allows use of the field controller to cycle generators, and alternators.

The voltmeter also has a D'Arsonval movement and is calibrated 0-3, 0-17, and 0-60 volts in .05, .2 and 1 volt divisions respectively. A push button converts the 0-17 calibration to a 0-1.7 volt range in increments of .01 volts.

The heavy duty carbon pile has a variable load range adjusted by a load control knob and gives specified load for 6 and 12-volt automotive type car, truck or bus battery.

All terminal connections are made easily. Voltmeter and field rheostat leads merely plug in and are held securely by multiple contact friction jacks. Ammeter and load leads are securely clamped in solid conductor binding posts with lock screw. A terminal jumper is furnished. Field rheostat is 75 ohm, 75 watt heavy duty type.

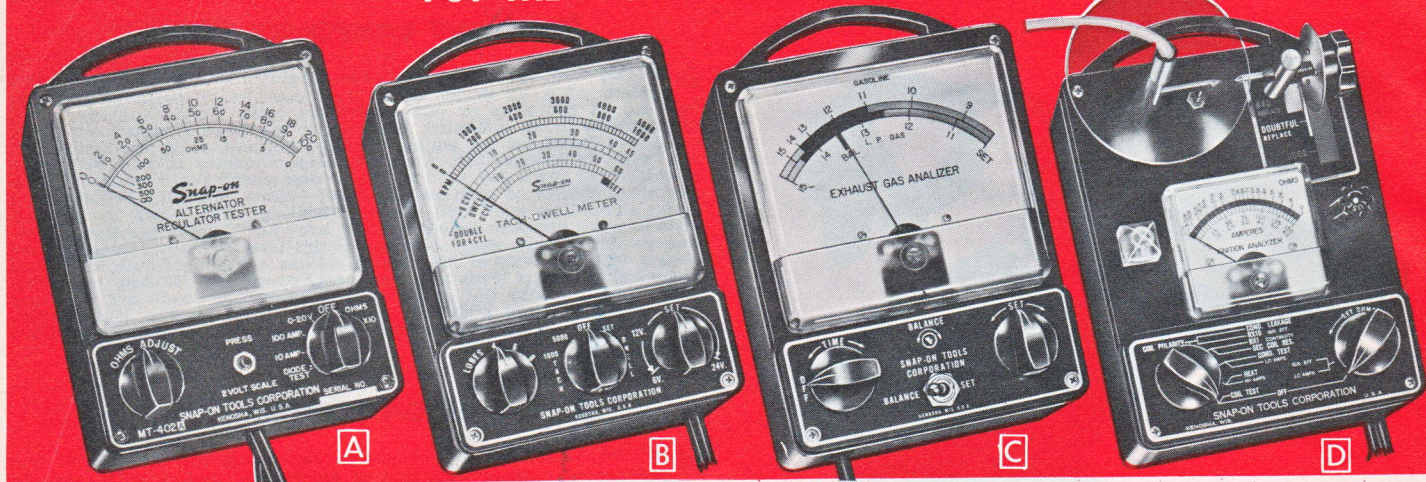
Meter scales are easy to read and terminals and controls are clearly marked. A complete 30-page instruction book describing and illustrating various test procedures is included with the instrument.

The case is $13\frac{1}{2}'' \times 10'' \times 7\frac{1}{2}''$ with smoothly rounded corners and has a red enameled finish. It is fitted with a sturdy leather carrying handle and four rubber feet. All necessary leads are included.

E MT-541 1200 Ampere Shunt. Used when checking current flow from 600-1200 amperes. It is a standard 50 M. V. 1200 ampere external shunt and may be used with any 50 M. V. meter. It is available as optional equipment, NOT INCLUDED WITH THE MT-540B, and must be ordered separately.

Snap-on PRECISION TUNE-UP INSTRUMENTS

PUT THE PROFIT-TUNE IN TUNE-UP



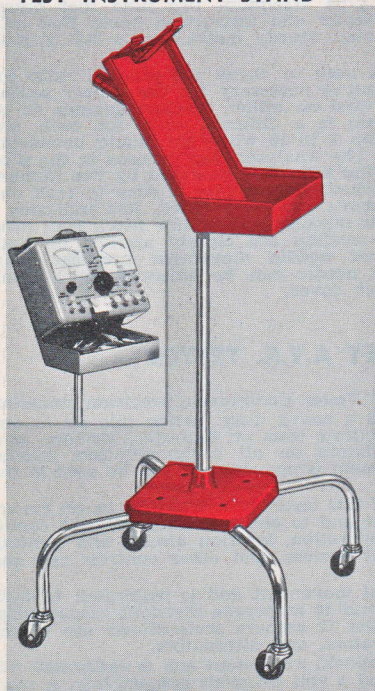
DIAGNOSE TROUBLES EASILY, QUICKLY, POSITIVELY

Any mechanic with a minimum amount of instruction can use this equipment and get accurate results. All readings are direct, there are no computations—no chance for error. Use the units in a set—in the shop or out on a call, singly or in pairs, they are truly portable. Each is a complete separate unit.

No Outside Power Needed. They are self-contained using simple batteries or the current of the engine. Steel case has red enamel finish, top panel is durable black bakelite.

Dials are easy to read with raised letters and large calibrations for definite readings. Needles are balanced and adjustable to "O". They are made of fine materials and fully covered by the SNAP-ON guarantee. Each unit has complete, simple-to-understand operating instructions so that anyone can learn to use them. Here is a complete testing lab for you, completely portable, that will build profits for you, that will save time and money and insure satisfied customers and repeat business.

TEST INSTRUMENT STAND



KRA-416 Instrument Stand. Rolls alongside the car and makes it easier to use test instrument.

Cast Iron Base: Weighs 18 lbs., is 9" square, 1 1/4" thick, and is placed only 7 3/4" from floor to give low center of gravity. Total weight is 25 lbs., height is 44". Four aluminum legs have ball bearing 2" diameter casters and extend outward to cover an 18" square area. With proper handling it can be rolled over uneven floors with little danger of tipping even with a heavy meter on top. 1" diameter aluminum center post angles at top to form handle which has a red plastic grip. Rack is heavy gauge steel 12" wide and 12 3/4" high, and holds either one large, or two small meters at an angle for easy reading. Tray is 12" wide, 6" front to back, 2 1/4" deep. Pocket at the back is 3/8" x 10" x 6" deep.

A ALTERNATOR-REGULATOR-GENERATOR TESTER

MT-402A Alternator-Regulator-Generator Tester. Tests all 6 or 12 volt generating systems on cars and trucks equipped with alternators or D.C. generators.

Ohmmeter for testing diodes and for continuity checks. It will show up resistance as low as one Ohm or up to 500 Ohms.

Dual Range Voltmeter with a 20-volt scale in .2 volt increments for checking voltage regulator settings and a 2 volt scale in .02 volt increments for measuring voltage drops throughout the charging circuit wiring.

Dual Scale Ammeter with a scale range of 100 amperes in one ampere increments for checking maximum output of the alternator generator and a 10 ampere scale in .1 ampere increments for measuring field current.

Controls include an "ohms-adjust" knob, used to zero the ohmmeter, a multiple switch selector, knob for ammeter, voltmeter, ohmmeter settings, diode test and "OFF" position and a 2-volt scale button. Needle movement has jeweled bearings and switch terminals are silver plated. Long leads have strong alligator clips, with colored boots. External ammeter shunt near the lead ends minimizes voltage drop. One "D" battery operates the tester.

C EXHAUST GAS ANALYZER

MT-405A Exhaust Gas Analyzer is designed for use with either gasoline or liquid petroleum type engines using a single exhaust pipe. It checks the air-flow ratio for economical engine operation and proper carburetor setting. Consists of indicating instrument, tail pipe fitting assembly, rear cell assembly and 20' conductor cable. In use, a sample of exhaust gas passes through chamber in rear cell which contains a resistance wire, sensitive to heat. Wire is heated by battery current, cooled by exhaust gases. The speed of cooling, which varies with amount of carbon dioxide, enables reading to be taken on meter. Bumper adaptor permits unit to be used on road tests.

Dial has two scales, one for gas, one for liquid petroleum, three colors indicate Rich, Normal and Lean. Rear cell assembly is rugged, will not "drown out" or freeze-up due to moisture. It is close to exhaust pipe giving instant response. Unit is powered by standard size "D" batteries. A timer shuts off automatically after 8 minutes of operation thus extending battery life.

B COMBINATION TACH-DWELL METER

MT-415B Combination Tach-Dwell Meter, designed for use on 6, 12 or 24 volt systems. Easy to use and understand. Does the jobs of a tachometer and a cam-angle meter contained in one compact case. The large, uncluttered dial face is easy to read with the Tach scale and numerals printed in black, and the Dwell or Cam-Angle scale with numerals printed in red. Tach scale is calibrated from 0 to 1,000 and from 0 to 5,000 R. P. M's. Two scales are provided for Dwell readings. This provides independent scales for 6 and 8 cylinder engines. A solid red zone in Dwell scale tells whether or not points need be replaced. The distributor remains on car, tests are performed under actual operating conditions. High-low range scale permits measurement of RPM at cranking and operating speeds with only one hook-up. Control knob switches from one scale to the other for fast reading.

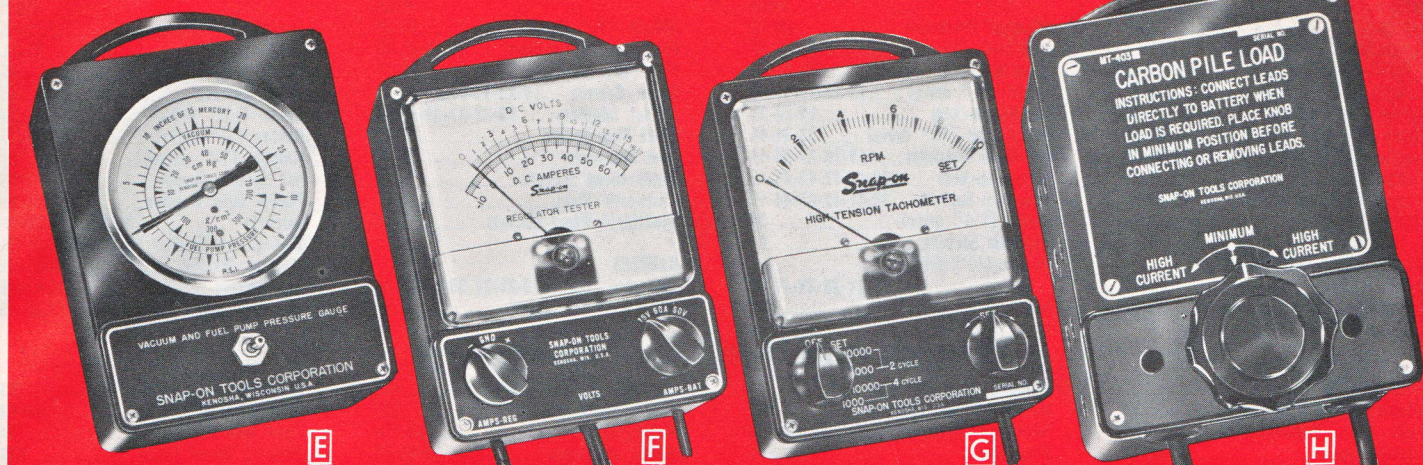
Low range permits more accurate readings of cranking speeds, essential in adjusting automatic transmissions. Uses one standard size "D" flash light battery. Has 7 1/2' leads.

D IGNITION ANALYZER

MT-430 Ignition Analyzer will perform the following tests quickly and accurately: primary coil efficiency; secondary coil efficiency; coil heat; stalled motor coil current; capacitor efficiency; secondary coil resistance; capacitor leakage; tests 0 to 1.5 amps; tests 0 to 6.0 amps; coil polarity; ignition efficiency; plug misfiring; ballast resistor continuity; general continuity; motor idle current; tests 0 to 300,000 ohms and 0 to 3 megohms. Two knobs combine to perform over half of tests meter will do. Meter is easily "zeroed".

Color coded dial has large figures for easy reading. Supplied with two flexible 6' leads that have color coded alligator clips for fast sure hook-up. Special neon indicator emits brilliant flash to show exact spark gap setting for secondary efficiency readings. Plastic shield on high tension cable protects operator. Analyzer is complete with 22 1/2 volt Mallory type mercury battery, special distributor adaptor, an MT-16 timing light jack, two fibre insulators and a 3' jumper wire with clips for various tests.

A NEW STANDARD OF PRACTICAL EXCELLENCE IN AUTOMOTIVE TEST INSTRUMENTS



THESE INSTRUMENTS GIVE YOU PLUS FEATURES

Jewelled bearings provide greatest needle accuracy.
Extra-long leads stretch across wide fenders.
Silver-plated switch terminals are resistance-free.
Anti-static dial coating prevents needle float.
Firm-gripping alligator clips that won't slip off.
Rubber feet hold meters safely on fenders.
Light and portable for in-shop or service call.
Instruction booklet that even beginners understand.
Handle on top for easy carrying or hanging.

E VACUUM AND FUEL PUMP PRESSURE GAUGE

MT-425A Vacuum and Fuel Pressure Gauge. Instrument housed in handsome black plastic case with convenient carrying handle. Detects a wide line of engine troubles from leaky manifolds to weak valve springs.

Vacuum Scale. Shows up to 28 inches of mercury in one and five inch increments and metric calibrations up to 70 cm., Hg., in two and 10 cm., increments.

Fuel Pump Pressure Scale. Shows up to 10 p.s.i. in half and one p.s.i., increments, in metric it shows up to 700 g/cm² in 50 g/cm² increments.

Dial increments are plainly marked for fast and easy reading. Included with the gauge is a ten foot rubber tube and one each of the accessories listed below.

Includes All These Accessories

MT-425-11.....	10' Rubber Tube
MT-12-10.....	1/8" pipe thread adaptor
MT-12-12.....	1/2"-20 thread adaptor
MT-14-6.....	1/4" x 18 pipe thread
MT-14-7.....	1/8" pipe, 1/4"-24 adaptor
MT-14-8.....	1/2"-20 thread adaptor
MT-14-9.....	1/16"-24 thread adaptor
MT-14-10.....	1/8" pipe thread, 3-way
MT-14-11.....	hose coupling
MT-14-12A.....	tube connector
MT-14-13.....	1/16"-24 thread adaptor
MT-14-14.....	5/8"-18 thread adaptor

F GENERATOR-REGULATOR TESTER

MT-401B Generator-Regulator Tester, has a 17 volt range for popular cars and trucks, and a 60 volt range for heavy duty ignition systems of more than 12 volts. The 60 ampere range handles any passenger car or truck in service today. No additional equipment is needed to test full generator output without damage to the tester. The built-in polarity switch makes fast, accurate readings possible.

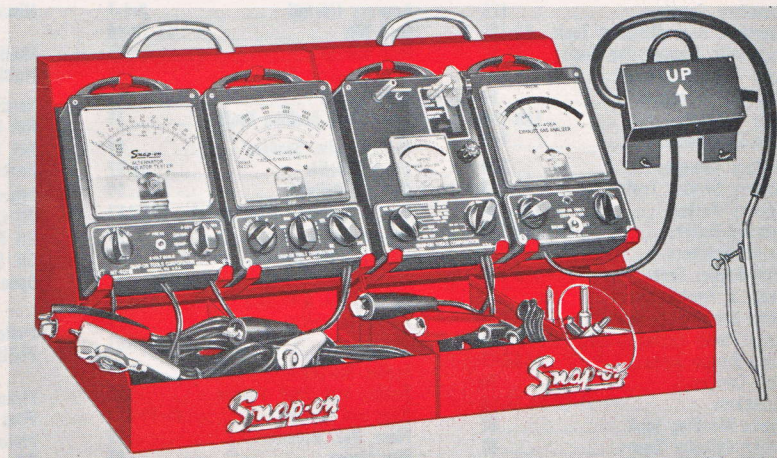
No adjustments or changes in hook-ups are required. . . Simply flip the switch to obtain the correct reading. One voltage scale provides readings in both the 15 and 60 volt ranges. No computations or allowances are required, the meter reading is the complete answer. Tester is furnished with 6 foot leads. No batteries needed.

G HIGH TENSION TACHOMETER

MT-413 High Tension Tachometer. Designed primarily for use on magneto ignition systems in 2 cycle or 4 cycle engines used on aircraft, high speed race cars, chain saws, snow blowers, power lawn mowers, garden tractors, and outboard and inboard marine motors. However, it will work on any engine using spark plugs.

Two control knobs accomplish changes in scales, changes for use on either 2-cycle or 4-cycle engines, and for re-setting the needle. The left knob has five positions which are: Set; 2-cycle, 1,000 RPM; 2-cycle 10,000 RPM; 4-cycle 1,000 RPM; 4-cycle 10,000 RPM. The right knob is used to reset the needle of meter to zero, which is especially useful when power of the penlight batteries diminish with age and usage. Three batteries are furnished.

Hook-up is simple, just attach one lead to ground, the other to the spark plug. When connected, this unit will not affect engine performance. No high tension enters the instrument.



BUY YOUR TESTING INSTRUMENTS IN SETS

MT-4010 Tune-up Set. This outfit consists of four of our most popular test meters: MT-402A Alternator-Regulator Tester, MT-415B Tach-Dwell Meter, MT-430 Ignition Analyzer, MT-405A Exhaust Gas Analyzer, two KRA-415 Meter Racks, and the KRA-315B Roll-Cab.

MT-4001A Set consists of MT-430 Ignition Analyzer; MT-405A Exhaust Gas Analyzer and the KRA-415 Meter Rack.

MT-4012 Set consists of MT-402A Alternator-Regulator tester; MT-415B Tach-Dwell meter and the KRA-415 Meter Rack.

MT-4013 Set consists of these 4 meters: the MT-402A, MT-415B, MT-430 and the MT-405A with two KRA-415 Racks.

METER RACKS

KRA-415 Meter Rack. This sturdily built unit is made of heavy gauge steel and is finished in baked-on red enamel. It is designed to hold any two of the instruments shown on this and opposite page and provides both a carrying case and a handy in-use and storage unit. It holds the meters at a convenient angle for easy reading of the dials. Trays in front and in back of the meters provide plenty of space for holding leads and accessories etc. Two of these racks will fit very nicely on top of the Roll-Cab listed below.

WATERPROOF PROTECTIVE COVERS KEEP INSTRUMENTS CLEAN

Durable Vinyl, waterproof, fire resistant, dust proof, attractive and easy to keep clean. Transparent vinyl fronts display and protect instruments.

MTC-4A Cover. Fits the MT-4010 or MT-4013 sets listed above.

MTC-2A Cover. Fits the MT-4001A or MT-4012 sets.

H CARBON PILE

MT-403 Carbon Pile. Necessary for checking the output of AC or DC Generators, Current Regulator settings. It can be used whenever a battery load is required. . . can also be used to help locate a weak or defective battery cell. Maximum rating is approximately 100 amperes for 6 volt, and 200 amperes for 12 volt, although greater loads are possible. The load applied will vary from between zero and 10 amperes to the maximum capacity depending upon the turn of the control knob. Long leads have strong, large alligator clips with rubber boots.

ROLL-CAB

KRA-315B Roll-Cab. Designed expressly to provide mobility for your engine testing instruments and lock-up security for instruments, accessories, parts, tools, etc. The top measures 26 1/2" wide by 19" back to front, and has a raised edge around sides and back. The drawer is 21 1/2" x 18 1/4" and is 4 1/4" deep. It opens easily on heavy duty slide channels and cannot be pulled all the way out by accident. Doors have metal pockets for instruction manuals etc., and one lock secures both doors and drawer. Height top to floor is 34 1/2". All four wheels are swivel-caster type. See page 8.

INDEX

Socket Wrench Equipment

SETS	PAGE
British Sizes	39-41
Combination Tool Sets	10-11-12-13-14-15-16-17-Back Cover
Extra H.D. (1" drive)	36-37
Ferret (3/4" drive)	23-24-25-39
Heavy Duty (3/4" drive)	33-34
Master (1/2" drive)	25-29-30-31-39
Metric Sizes	39-41
Midget (1/4" drive)	17-19-20-39
Whitworth Sizes	39-41

SOCKETS AND ATTACHMENTS	
British Sizes	41
Clutch-type Screw Drivers	19-23

	PAGE
Crowfoot Wrenches	18-22
Drag Link Adjusters	22-27-35
Extra H.D. (1" drive)	36-37-45
Ferret (3/4" drive)	22-23-25-41-44
Flexible Sockets	19-22-28
Heavy Duty (3/4" drive)	33-34-45
Hex Head Wrenches	19-23-27-35-43
Impact Sockets	38-41-42-43-44-45
Industrial Sockets	38-41-42-43-44-45
Jumbo (1 1/2" drive)	38
Magnetic Sockets	44
Master (1/2" drive)	25-27-28-29-41-44
Metric Sizes	41

	PAGE
Midget (1/4" drive)	19-20
Phillips Screw Drivers	19-23-25-43
Pipe Plug Sockets	23-27
Screw Drivers	19-22-23-27-29-35-43
Socket Adaptors	18-22-27-35-37-45
Spark Plug Socket	88
Stud Removers	32-43
Weatherhead Sockets	22
Whitworth Sizes	41
Windshield Wiper Sockets	19
HANDLES	
Extension Bars	18-21-27-35-37-38-44
Extra H.D. (1" drive)	37

	PAGE
Ferret (3/4" drive)	21-25
Flexextension	18-21
Heavy Duty (3/4" drive)	35
Impak Drivers	25
Jumbo (1 1/2" drive)	38
Master (1/2" drive)	25-26-27
Midget (1/4" drive)	18
Nut Spinner Handles	18-21-27-35
Plastic Grip Handles	18-21
Ratchets	18-21-26-35-37-38
Sliding Tee Handles	18-21-27-35-37-38
Speeder Handles	18-21-27
Torgometers	46-47-48
Universal Joints	19-21-27-35-45

Wrench and Hand Tool Equipment

Adjustable Wrenches	56
Alternator-Regulator Tester	130
Amp., Volt., Resistance Tester	129
Anal-O-Scope	126-127
Arbor Press	116
Armature Growlers	125
Armature Reconditioning Tools	93-125
Automatic Transmission Tools	50-51
Axle Bearing Remover	108
Axle Nut Wrenches	84
Axle Pullers	108-110
Axle Rethreaders	103
Battery Chargers	124
Battery Service Tools	125
Battery Testers	124-125
Bearing Pullers	108-109-110
Bench Grinders	100
Body-Fender Tools	114-115-116-117
Body & Fender Files	114
Body Bumping Hammers	115
Body Panel Cutter	114
Body Repair Jacks	116-117
Bolt Cutters	70
Boxockets	40-52-53-54-55-56
Brake Bleeding Tank	82
Brake Cylinder Hones	82
Brake Fluid Dispenser	82
Brake Pedal Jack	82
Brake Pliers	71
Brake Tools	82-83
British Size Wrenches	39-40-41
Buffing Bonnets and Pads	99
Buick Specials	50-51-76-77-79-80-81-83-114
Bung Remover Tools	89
Bushing Cutter	67
Bushing Removers, Inserters	79-111
Cam Loc Wrenches	56
Cam Angle Meters	126-127-130
Carbon Cleaning Brushes	93-97
Carbon Pile	131
Carbon Scrapers	93
Carrier Side Bearing Puller	109
Caster-Camber Tools	83-118-119
Chevrolet-Corvair Specials	50-51-76-77-79-80-81-83-114
Chisels	66-67-114
Chisel & Punch Holder	67
Chrysler Line Specials	50-51-80-81-82-83-114
Chucks	43
Circuit Testers	90-126-127-129-130-131
Clutch Aligner Set	110
Clutch Screw Drivers	19-23-63
Combination Wrenches	40-60-61
Compression Gauges	122
Coil, Condenser Testers	129
Cotter Pin Tools	67
Creepers and Stool	92
Current Indicator	123
Cutting Oil	92
Cylinder Glaze Breakers	82-85-86
Cylinder Head Wrenches	79-89
Cylinder Pressure Tester	122
Cylinder Ridge Reamers	87
Diagonal Cutters	68-70
Dies and Taps	41-102-103

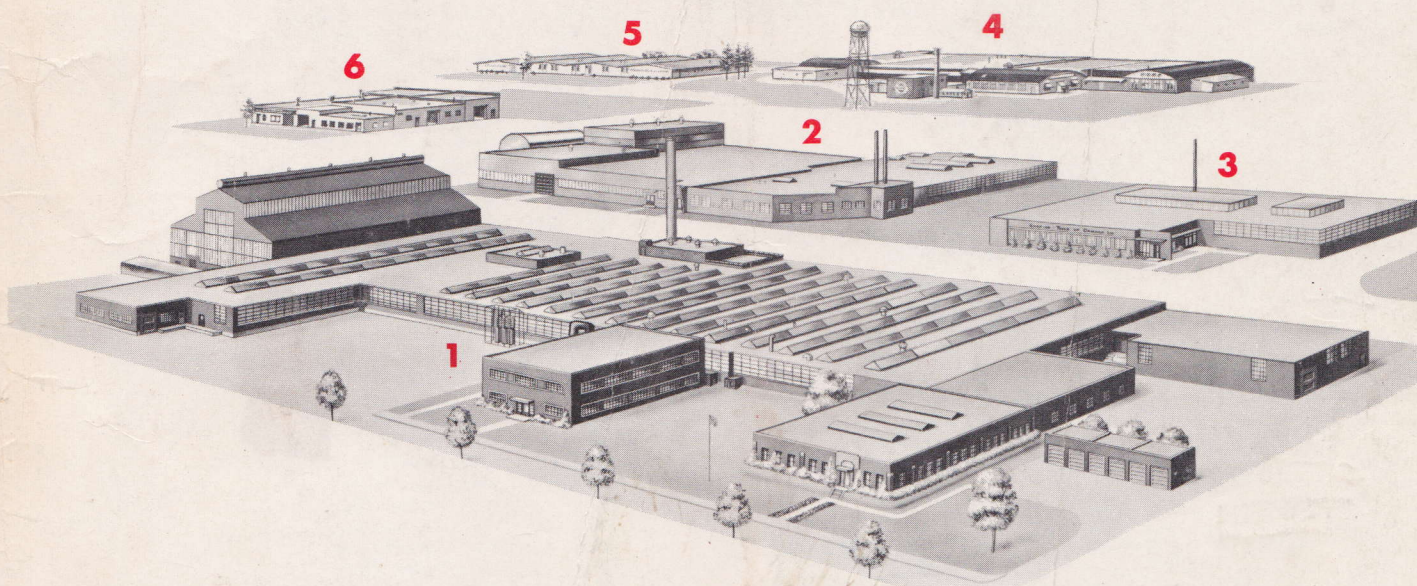
Diamond Wheel Dresser	73
Distrib-U-Scope (Tester)	128
Distributor Tools	81-128
Dolly Blocks	115
Door Handle Tools	114
Drawers (Metal)	2-6-7
Drill Bits	32-90-98
Drill Chucks	96
Drill Grinding Attachments	101
Drill Stands	97
Drive Shaft Bushing Tools	79
Electric Disc Sanders	99
Electric Drills	96-97
Electric Polisher	99
Engine Analyzer (Electronic)	126-127
Engine Saf-T-Lif	91
Engine Head Holder	75
Etching Pencil	90
Exhaust Gas Analyzers	129-130
Extension Lights	88
Eye Shields	101
Feeler Gauges	49
Fender and Seat Covers	91
Files and Handles	81-99-114
Flare Nut Wrenches	54
Flex-stones	81
Flexhead Wrenches	55
Flywheel Turner	90
Ford Line Specials	50-51-78-79-81-83-114
Gear Pullers	104-105-106-107-108-109
Generator Regulator Tester	131
General Motors Specials	50-51-76-77-79-80-81-83-114
Grease Fitting Tool	88
Grease Retainer Pullers	51-108
Grinders, Bench	100
Grinders, Disc	99
Grinders, Valve	72-73
Grinding Discs	99
Grinding Wheels	72-73-74-101
Grinding Wheel Dressers	73-101
Gripping Pliers	68-69-71
Hack Saw Frame and Blades	94
Half-Moon Boxockets	54
Hammers	57-115
Heavy Duty Boxockets	55
Heavy Duty Open Ends	55
Hex Head Wrenches	19-23-27-35-43-56
Hole Saws and Cutters	94
Hood Jack	91
Hose Clamp Pliers	71-91
Hydra-Pak Body Jack	116-117
Hydraulic Floor Press	105
Hydraulic Gear Pullers	104
Ignition Controller	123
Ignition Wrenches	40-58
Impact Sockets	38-42-43-44-45
Impact Wrenches	42-43
Inspection Mirrors	90
Jack Stands	91
King Pin Press	112-121
Lock Washer Pliers	71-89
Magnetic Caster-Camber Gauges	119
Magnetic Pickup Tools	19

Magneto Winding Tester	129
Master Analyzer	127
Metal Cutters	67-114
Metric Wrenches	39-40-41
Mica Undercutter	93
Miscellaneous Special Tools	88-89-90-91
Muffler Tools	85
Multi-Spline Wrenches	56
Needle Nose Pliers	68-71
Nut Cracker	91
Nut Drivers	54
Never-Seez Compound	89
Offset Screw Drivers	65
Oil Cans	92
Oil Pressure Gauges	51
Oil Seal Removers, Drivers	51-87
Open End Wrenches	40-54-55-57-58-59-60-61
Padlocks	88
Phillips Drivers	19-23-25-43-62-63-64-65
Pickup Tools	19-90
Pilot Bearing Puller	108
Pinion Gear Pullers	109
Pitman Arm Puller	109
Pipe Wrenches	56
Piston Groove Reconditioner	86
Piston Ring Tools	76-77-86
Pliers (all types)	68-69-70-71
Polisher (Electric)	99
Powerench for Budd Wheels	84
Pressure Gauges	51
Pry or Pinch Bars	66-67
Pulling Tools	104-105-106-107-108-109-110-111-112-113
Punches	66-67-114
Putty Knives	93
Ratcheting Boxockets	55
Ratcheting Open Ends	54
Reed and Prince Screw Drivers	63
Refrigeration Ratchet	54
Remote Control Switch	90
Rim Wrenches	84
Ring Compressors	76-78-86
Roller Tool Benches	2-3-4-6-7-8
Sanding Disc Pads	99
Sanders (Electric)	99
Sand Blast Gun	92
Saws—Frames, Blades	94
Scrapers	93
Scratch Awl	88
Screw Drivers	19-23-27-29-35-43-62-63-64-65
Screw Extractors	32
Screw Starters	19-65
Shackle Bushing Tools	111
Side Bearing Puller	109
Sidewalk Signs	118
Solder Paddles	114
Soldering Irons	95
Spark Plug Adpt., Jacks	123
Spark Plug Gapper	90
Spark Plug Gauge	49
Spark Plug Tap Set	103
Spark Testers	64-90-125-126-129-130

Speedometer Lubricator Tool	88
Spotlight Drill	88-90
Steel Tape Rules	94
Steering Wheel Puller	113
Stethoscope	90
Strap Wrench	88
Stud Removers	32-43
Tachometer	126-127-130-131
Tailpipe Tools	85
Tap and Die Sets	41-102-103
Tap Wrenches	102
Tappet Wrenches	40-58
Tension Measuring Wrenches	46-47-48
Tester, Distributor	128
Testers, Ignition	122-123-124-125-126-127-128-129-130-131
Thread Restorers	103
Tie Rod Separators	84
Timing Gear Puller	109
Timing Lights	123
Tinners Snips	114
Tire and Wheel Tools	84
Tire Scriber	119
Toe-In Gauges	118-119
Tool Chests	2-3-4-5-6-7-8-9-24-31-33-37
Tool Truck	8
Torgometers	46-47-48
Torsion-Aire Height Gauges	80
Trammel Bar (Toe In)	119
Trunnion Pin Press	112
Tube Cutter	91
Tube Flaring Tool	91
Tubular Wrench Handles	55
Tune-up Instruments	122-123-126-127-128-129-130-131
Tune-Up Kit	58
Turntables (Wheel Aligning)	119
Universal Joint Bearing Tool	109
Universal Puller Tool Sets	108-110
Vacuum Gauge	122-131
Valve Assembly Puller	75
Valve Clearance Adj. Tools	75
Valve Guide Hole Cleaners	75
Valve Guide Pilots	41-73
Valve Key Tools	75
Valve Lappers	75
Valve Refacers	72
Valve Reseating Tools	41-72-73-74-75
Valve Seat Grinders	73
Valve Seat Grinding Wheels	74
Valve Spring Compressors	74
Vises	91
Vise-Grip Wrenches	49
Wheel Aligning Equipment	118-119-120-121
Wheel Balancer	120-121
Wheel Brush Arbor Adaptor	97
Wheel Pullers	112-113
Wheel Seal Drivers	87
Wheel Spinner	120
Wheel Weights and Pliers	120
Whitworth Wrenches	39-40-41
Wire Brushes	43-93-97-101
Wire Stripper	90
Wool Polishing Bonnet	99



FACILITIES ARE GEARED TO THE GROWING NEEDS OF INDUSTRY AND PROFESSIONAL SERVICE MECHANICS



Snap-on Tools CORPORATION and SUBSIDIARIES

- ① SNAP-ON TOOLS CORPORATION
KENOSHA, WIS., FACTORY AND GENERAL OFFICES
- ② SNAP-ON TOOLS CORPORATION
MT. CARMEL, ILL., FACTORY AND OFFICES
- ③ SNAP-ON TOOLS OF CANADA, LTD.
TORONTO, ONT., FACTORY AND GENERAL OFFICES

- ④ WEIDENHOFF CORPORATION
ALGONA, IOWA, FACTORY AND OFFICES
- ⑤ JUDSON ENGINEERING CORPORATION
NATICK MASS., FACTORY AND OFFICES
- ⑥ KELSEY ENGINEERING CORPORATION
KENOSHA, WIS., FACTORY AND OFFICES

When you buy Snap-on tools you are backed by an organization that can deliver—not only with top-quality tools, but also in terms of fast, dependable service, specialized engineering and design assistance, and nationwide warehouse facilities for fast, large quantity deliveries.

Our modern manufacturing facilities are geared to the mass production of hand tools and shop equipment under quality control processes that have built a fine reputation for SNAP-ON products. Throughout the world SNAP-ON tools are the choice of industrial users and professional mechanics.

Snap-on Tools

**DISTRIBUTED TO CUSTOMERS THROUGH
BRANCHES AND DEALERS EVERYWHERE**

IT'S GOOD BUSINESS FOR YOU TO USE

Snap-on

TOOLS AND SHOP EQUIPMENT

Regular Service From the Snap-on Dealer

The SNAP-ON dealer who calls regularly at your shop with the latest in tools and equipment can help you select the shop equipment or tools you need and let you try them out right on the job. SNAP-ON dealers all over the country, working closely with service managers and mechanics, understand service problems and keep on the alert for ideas that will improve tool efficiency. This is one of the reasons why SNAP-ON has long been a leader in the field with new time-saving tools for specific jobs. Further, SNAP-ON dealers hear about new uses for tools you may already own and are glad to pass these tips along to you.

Snap-on dealers demonstrate under working conditions. Thus, the tool itself can prove its superior design features and top-quality construction. You can see firsthand why SNAP-ON tools pay big dividends in speed, safety and improved work—why SNAP-ON tools are the choice of better mechanics.

Instruction in Snap-on Equipment Operation

When you invest in SNAP-ON Shop Equipment such as the Anal-O-Scope, Distrib-U-Scope, Wheel Aligning and Balancing Equipment, Engine Test Meters, etc., you can be sure that complete instruction in its operation is available to you. We want your investment to help you render the best possible service to your customers and make more profits for you. Your SNAP-ON dealer has received the training necessary to provide this service himself or can arrange for your instruction by a SNAP-ON Equipment Specialist. This service is available to you whenever you need additional help.

**Increase Your Earning Power NOW . . . With
Profit Building Tools and Equipment . . .**

Snap-on Time Payments Make it Easy

Why handicap your earning power with inadequate tools when you can equip yourself with all the tools and shop equipment you need through the SNAP-ON Time Payment plan? Have it working for you while it is paying for itself.

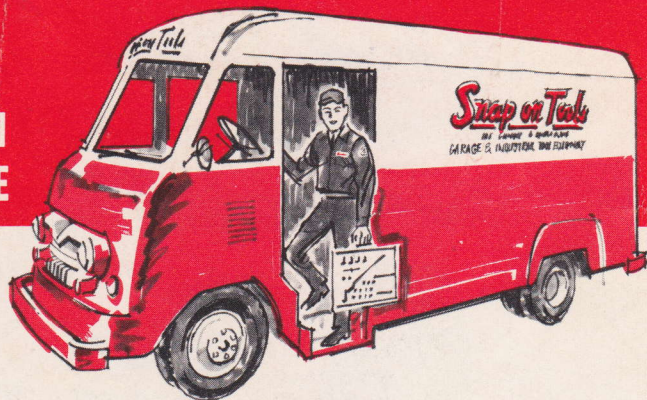
Whether you are a mechanic who needs a complete set of tools, roll-cab, etc., or the operator of a repair shop or service station in need of shop equipment, you'll find it profitable to equip yourself NOW. The biggest corporations do business on credit . . . it's the smart way for you, too. Your SNAP-ON dealer or the nearest SNAP-ON branch office will be glad to arrange a Time Payment Contract for you.

Visit the Nearest Snap-on Branch

Industrial tool users, mechanics, garage owners are always welcome at any SNAP-ON Branch. Our people will be happy to demonstrate and let you examine tools and equipment. If you need tools and a SNAP-ON dealer has not called on you, notify your nearest branch and the dealer in your locality will stop in to see you.

Snap-on Tools May be Ordered by Mail

If there is no SNAP-ON dealer in your area, mail your order to our nearest branch. Tools are shipped promptly. Examine them carefully and if you are not satisfied, send them back unused within ten days and we will gladly replace the tool or refund your money, whichever you request.



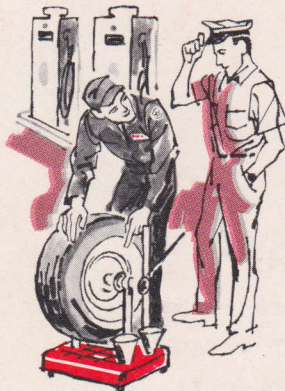
**SERVICE
TO
CAR DEALERS**



**SERVICE
TO
MANAGERS**



**SERVICE
TO
MECHANICS**



**SERVICE
TO
STATION
OWNERS**



Special Service to Industrial Tool Users

Snap-on offers specialized tool service to plant executives concerned with production, maintenance and purchasing functions. Production line operations, for example, demand extra tough socket wrenches, specially designed and heat treated to withstand impact and wear. Snap-on specialists, after observing actual production operations, can frequently recommend a different socket or a modification that cuts tool costs and time. Because of his training and experience, a Snap-on man is often able to suggest using a specially designed tool on jobs where a standard tool can't fill the bill. Whatever the size of your industrial wrench and hand tool requirements, call your nearest Snap-on branch for prompt service.

SERVING INDUSTRY WITH TOOLS FOR PRODUCTION AND MAINTENANCE